FDL-390CV

SERVICE MANUAL

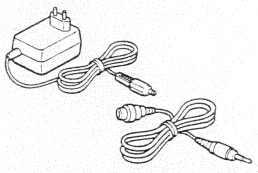
AEP Model

SPECIFICATIONS

TV standard	CCIR TV standard
Colour system	PAL
Channel coverage	VHF-L E2—E4, S01—S1 VHF-H S2—S10, E5—E12, S11—S20 UHF E21—E68
Antenna	VHF/UHF telescopic antenna
Display	TN LCD/TFT active matrix method Total picture-element number: 89,505 Effective picture-element ratio: more than 99.99%
Picture size	3-inch picture measured diagonally
Speaker	77 mm (3 inches) dia.
Input	EXT ANT: minijack, impedance 75 ohms AUDIO/VIDEO IN: tripolar minijack, Impedance Audio 47 kilohms/Video 75 ohms
Output	EAR: minijack, impedance 8—300 ohms
Power requirement	9 V DC, See page 3 "Power sources".
Battery life	See page 3 "Power sources".
Power consumption	5.8 W (9 V DC)
Dimensions	Approx. 208 × 116.5 × 72.5 mm (w/h/d) ($8^1/_4 \times 4^5/_8 \times 2^7/_8$ inches) incl. projecting parts
Weight	Approx. 1.1 kg (2 lb 7oz) incl. batteries.

Supplied accessories

AC power adaptor (1)
Antenna cable (1)



Design and specifications are subject to change without notice.

FEATURES

- The LCD (Liquid Crystal Display) provides clear pictures and natural facial colour tones.
- This unit receives either CCIR (VHF/UHF) or cable TV system.
- This unit is used as an AV (audio/video) monitor.
- This unit has a powerful sound output of 500mW.
- The voltage synthesizer tuning system allows easy tuning.
- Provides 8 hours of continuous operation using the six LR14 (size C) alkaline batteries.
- An angle-adjustable stand is provided.

MICROFILM

LCD COLOUR TV

SONY®

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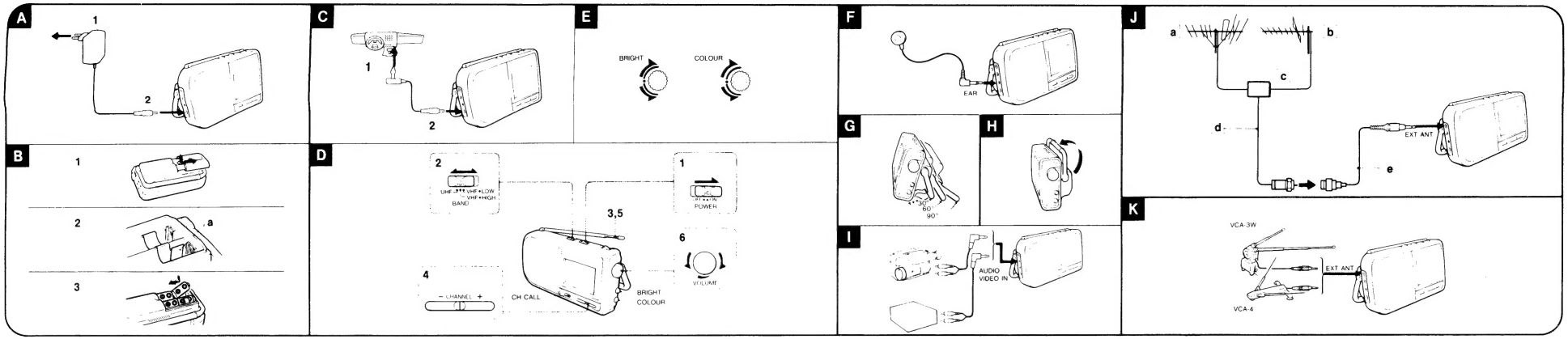


When you read this operating instructions, refer to the illustrations indicated in ■.

Power Sources

Using on House Current A

Use the supplied AC power adaptor.
1 Connect the AC power adaptor to a wall outlet.
2 Connect the AC power adaptor to the DC IN 9V jack of this unit.

After operating this unit with an AC power adaptor, be sure to disconnect the adaptor from the mains.
The power switch on this unit does not turn off the AC power adaptor.

Using on the Alkaline Batteries B

Insert six LR14 (size C) batteries (not supplied).
1 Remove the battery compartment lid at the rear.
2 Lay the ribbon [a].
3 Insert the batteries with correct polarities.
4 Reinstall the lid.

To remove the batteries
Pull the ribbon. The batteries will come out of the compartment.

Battery replacement
When the batteries become weak, the unit's protective function will automatically cause the picture to disappear. In this case, replace all the batteries with new ones.

Battery life
You can continuously use for approximately 8 hours on the alkaline batteries, or approximately 2.5 hours on the manganese batteries.
The battery life becomes short in a cold place.

Using on Car Battery C

You can use the unit only in a 12 V DC car.
You need the Sony DCC-E190L car battery cord (not supplied).
1 Connect the car battery cord to the cigarette lighter socket.
2 Connect the car battery cord to the DC IN 9V jack of this unit.

Notes
- Use only the supplied AC power adaptor or DCC-E190L car battery cord. Do not use any other AC power adaptor or car battery cord.
- When the unit is not to be used for a long period of time, remove the batteries to avoid unit damage caused by battery leakage and corrosion.


Polarity of the plug

Watching the TV D

For your safety, do not watch the TV nor operate the controls while driving.

To watch the cable TV, connect the cable to the EXT ANT jack.
1 Set the POWER switch to ON.
2 Select the band as follows:
To watch the UHF channels, set to UHF.
To watch the VHF channels, set to VHF•LOW (E2—E4) or VHF•HIGH (E5—E12).
To watch the cable TV, set to VHF•LOW (S01—S1) or VHF•HIGH (S2—S20).
The green line on the screen indicates the VHF low channels.
The blue line indicates the VHF high channels.
The red line indicates the UHF channels.
3 Pull out the antenna fully (not necessary for the cable TV).
4 Tune in the desired channel.
5 Adjust the length and direction of the antenna (not necessary for the cable TV).
For UHF, the receiving may be better with the short antenna.
6 Adjust the volume.

To turn off the TV
Set the POWER switch to OFF, and fold the antenna.

If the channel changes
If the power is momentarily lost because of a mechanical shock, or if the unit has passed through a tunnel, the channel may change. If this happens, tune in the desired channel again with CHANNEL +/−.

Adjusting the Picture E

For more brightness, turn the BRIGHT (brightness) control clockwise.
For less brightness, turn the BRIGHT control counterclockwise.
For more colour intensity, turn the COLOUR control clockwise.
For less colour intensity, turn the COLOUR control counterclockwise.

To indicate the current channel
Press the CH (channel) CALL button.
The line (green for VHF low, blue for VHF high, red for UHF) appears at the position of the current channel.

To listen with the earphone F
Connect the Sony ME-L91D earphone (not supplied) to the EAR jack.

How to Use the Stand

To watch the TV G
You can adjust the stand in three angles.

To carry the unit H

Using as a Monitor I

You can use the unit as a colour monitor for your VTR or video camera recorder. Connect your VTR to the AUDIO/VIDEO IN jack using the Sony AVK-715M AV cord (not supplied). Before connection, turn off the unit and the VTR.

Notes
- If the picture is distorted or noisy, move the unit away from the VTR.
- When watching TV, disconnect the plug from the AUDIO/VIDEO IN jack.

Connecting an External Antenna

Receiving will improve.

Connecting the Outdoor Antenna J

[a] to [e] indicate the letters in the illustration.
Connect the VHF antenna [a] and/or the UHF antenna [b] to the EXT ANT jack of this unit using the mixer [c], 75-ohm coaxial cable [d] (not supplied), and antenna cable [e] (supplied).

Connecting the Car Antenna K

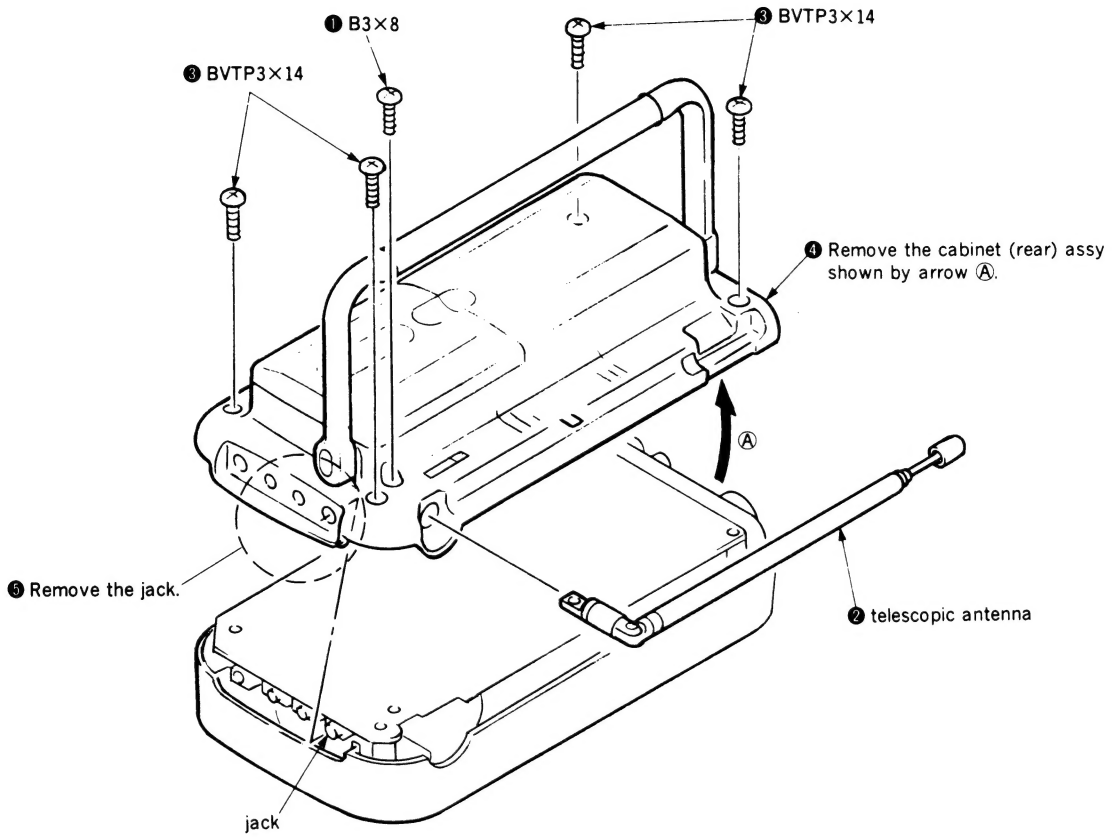
Connect the car antenna (not supplied) to the EXT ANT jack of this unit.

This section is extracted from instruction manual.

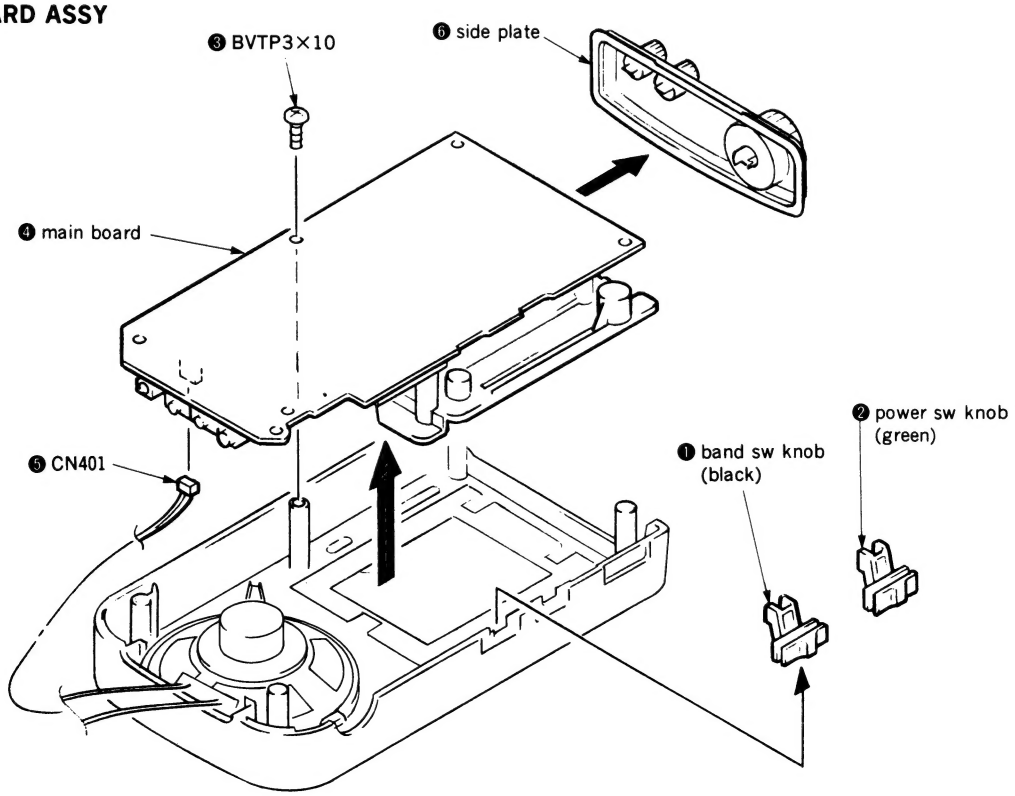
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

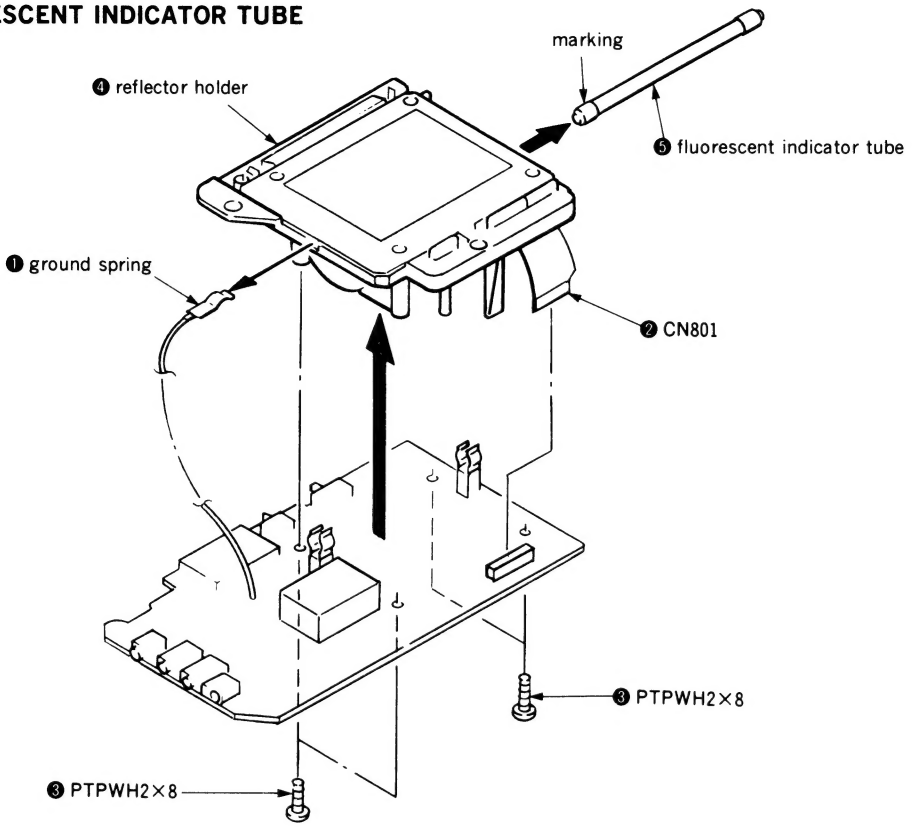
2-1. CABINET (REAR) SUB ASSY



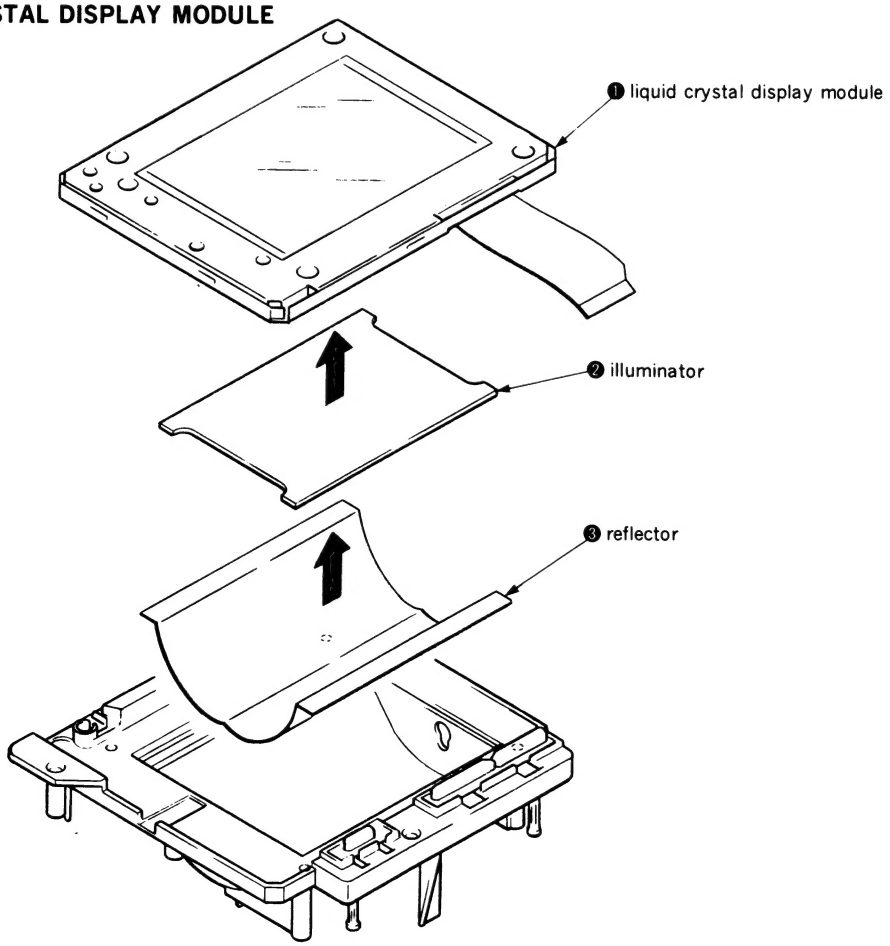
2-2. MAIN BOARD ASSY



2-3. FLUORESCENT INDICATOR TUBE



2-4. LIQUID CRYSTAL DISPLAY MODULE



SECTION 3
ELECTRICAL ADJUSTMENTS

CAUTIONS

1. Make adjustment in sequence as described.
2. Power supply voltage is + 9.0 ± 0.1V (DC jack end) unless otherwise specified. Power supply shall not be input overlapped.
3. Check the error in waveform and screen for adjustment.
4. Measure a fluorescent tube and an Liquid Crystal Display module (LCD) device by connecting them with the main board.
5. Unless otherwise specified, input the color bar signal, etc. from AUDIO/VIDEO IN jack (J501) by using AV-cord (AVK-715M, etc.) to intercept the internal TV detection output.
   Also, usually use monochromatic gradation wave monoscope with chroma signal and burst signal OFF.
6. Measuring instruments
   - PAL pattern generator
   - Digital multitester
   - Oscilloscope
7. Modes of SW, VR
   S601 (POWER) ..... ON
   S101 (BAND) ..... VHF • HIGH
   RV401 (VOLUME) ..... MIN.

VOLTAGE ADJUSTMENT

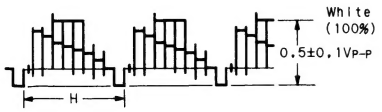
Procedures :

1. Connect a digital multitester between TP605 (+4.8V) and TP602 (GND) on the main board, and then adjust RV601 so that the reading of the voltage is + 4.85 ± 0.05V.
2. Connect a digital multitester between TP606 (−8V) and TP602 (GND), and then adjust RV602 so that the reading of the voltage is − 8.0 ±0.1V.
3. Connect a digital multitester between TP607 (+4.4V) and TP602 (GND), and then adjust RV603 so that the reading of voltage is + 4.4 $^{+0.05}_{-0}$ V.

WAVEFORM CHECK/COM ADJUSTMENT

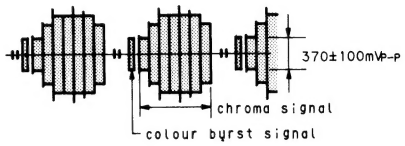
Procedures :

1. Y signal check (H cycle)
   Input the color bar signal from AUDIO/VIDEO IN jack (J501).
   Connect an oscilloscope to TP303 (Y) to check if the waveform is as shown in the following figure.

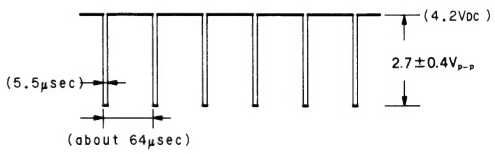


2. SYNC signal check (H cycle)
   Connect an oscilloscope to TP304 (SYNC) to check if the waveform is as shown in the following figure.

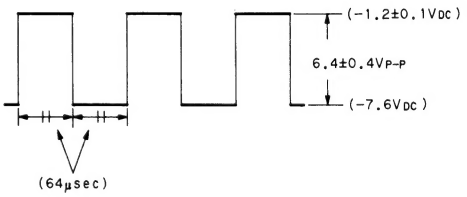
3. Color burst signal check (H cycle)
   Connect an oscilloscope to TP305 (CHROMA) to check if the waveform is as shown in the following figure.



4. H pulse check (H cycle)
   Connect an oscilloscope to TP301 (H PULSE) to check if the waveform is as shown in the following figure.



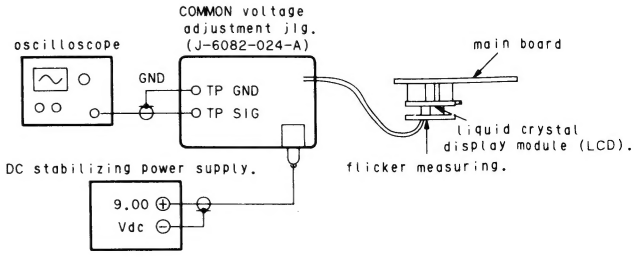
5. COM signal check/adjustment (2H cycle)
   Connect an oscilloscope to TP302 (COM) to check if the waveform is as shown in the following figure.
   Turn and set RV309 at the position where the contrast is the most distinction LCD. (DC level of figure are reference)



COMMON VOLTAGE ADJUSTMENT

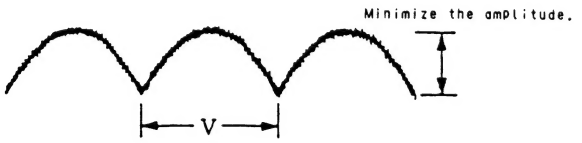
— Adjustment with a jig —

connection :



Procedures :

1. Apply the photo detector unit of COMMON voltage adjustment jig (J-6082-024-A) to the LCD. At this time, turn the LCD downward to avoid interference of external light.
2. Connect an oscilloscope to the common voltage adjustment jig.
3. Input the monochromatic gradation wave from AUDIO/VIDEO IN jack (J501).
4. Turn RV301 to check if the waveform is as shown in the figure below. When flicker waveform is not output, check the applying state of the photo detector unit and the state of external light and then turn the BRIGHT VR (RV305).
5. Minimize the amplitude of flicker waveform with RV301.



* When there is no COMMON voltage adjustment jig, make the following simple adjustment.

— Simple adjustment —

Procedure :

1. Input the monochromatic gradation wave from AUDIO/VIDEO IN jack (J501).
2. Turn and set RV301 at the position where the contrast is the most distinction LCD. Magnify LCD with a magnifier, etc., up to the level where the pixels of LCD can be obtained, and adjust RV301 so that the flickers are minimum while watching the flickers.

BRIGHT VOLTAGE PREADJUSTMENT

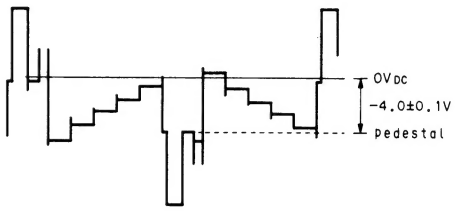
Procedures :

1. Input the color bar from AUDIO/VIDEO IN jack (J501).
2. Connect a digital multitester between TP307 (BRT) and TP311 (GND) and adjust BRIGHT VR (RV305) so that the reading of the voltage is + 1.85 ± 0.02 V.

G BIAS/B BIAS/R BIAS ADJUSTMENTS

Procedures :

1. Turn COLOUR VR (RV307) to minimum (monochrome).
2. Connect a ceramic capacitor (10000pF) between TP305 (CHROMA) and TP311 (GND).
3. Input the monochromatic gradation wave from AUDIO/VIDEO IN jack (J501).
4. Connect an oscilloscope to TP308 (G), and adjust RV306 so that DC level for the pedestal unit of positive polarity G signal is −4.0 ± 0.1V as shown in the following figure. (G bias adjustment)
5. Connect an oscilloscope to TP310 (B), and adjust RV310 so that DC level for the pedestal unit of positive polarity B signal is −4.0±0.1V as shown in the following figure. (B bias adjustment)
6. Connect an oscillospe to TP309 (R), and adjust RV311 so that DC level for the pedestal unit of positive polarity R signal is −4.0±0.1V as shown in the following figure. (R bias adjustment)

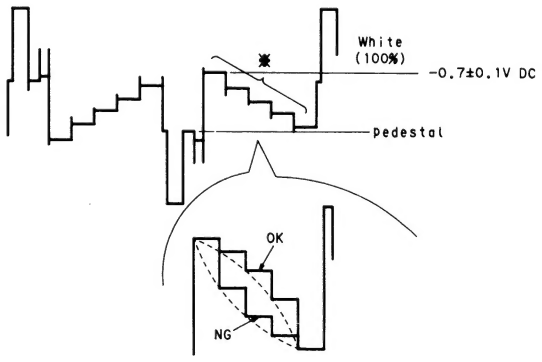


CONTRAST/B GAIN/R GAIN ADJUSTMENTS

Procedures :

1. Input the monochromatic gradation wave from AUDIO/VIDEO IN jack (J501).
2. Connect an oscilloscope to TP308 (G), and adjust RV302 so that the DC voltage the positive polarity G signal of white (100%) is − 0.7 ± 0.1 V as shown in the following figure. (Contrast adjustment)
3. Connect an oscilloscope to TP310 (B), and adjust RV301 so that the DC voltage the positive polarity B signal of white (100%) is −0.7±0.1V as shown in the following figure. (B gain adjustment)
4. Connect an oscilloscope to TP309 (R), and adjust RV303 so that the DC voltage the positive polarity R signal of white (100%) is −0.7±0.1V as shown in the following figure. (R gain adjustment)

Note : Adjustment the each RV so that the waveform of ※ part is convex to upper side as shown in the following figure.



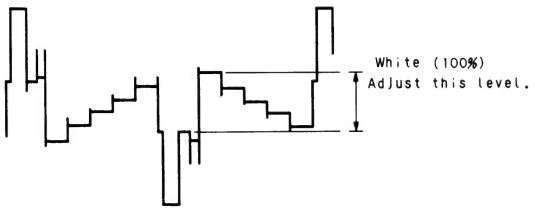
WHITE BALANCE ADJUSTMENT

Procedures :

1. Connect the channel 1 of an oscilloscope to TP308 (G). Turn the BRIGHT VR (RV305) counterclockwise to darken the screen. (until the minimum value which can be observed by the oscilloscope is reached.)
2. With the oscilloscope connected to TP308 (G), connect

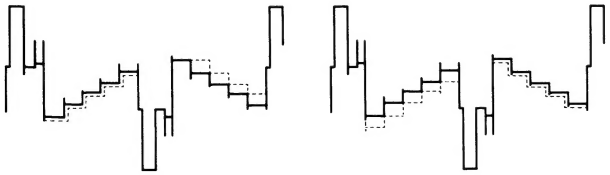
TP309 (R) to the channel 2.

3. Turn RV303 and adjust the DC voltage of the positive polarity R signal in the white direction (100%) to the DC voltage of the positive polarity G signal in the white direction (100%).
4. With the oscilloscope connected to TP308 (G), connect TP310 (B) to the channel 2.
5. Turn RV301 and adjust the DC voltage of the positive polarity B signal in the white direction (100%) to the DC voltage of the positive polarity G signal in the white direction (100%).



6. Connect a digital multitester to TP307 (BRT). Turn RV305 clockwise and brighten the screen so that the reading of the voltage value is + 1.85 ± 0.1 V.
7. Connect TP308 (G) to the channel 1 and TP309 (R) to the channel 2 of the oscilloscope.
8. Turn RV311 and adjust so that the positive and negative polarity R signal overlaps the positive and negative polarity G signal * (the DC level of each tone is matched between these signals).
9. With the oscilloscope connected to TP308 (G), connect TP310 (B) to the channel 2.
10. Turn RV310 and adjust so that the positive and negative polarity B signal overlaps the positive and negative polarity G signal * * (the DC level of each tone is matched between these signals).

*, * * : The positive and negative polarity signal may not be matched with the corresponding signal simultaneously due to variations. (See figures (a) and (b).) In this case, adjust to the average positions of the positive and negative positions. (See figure (c).)


(a) (b)


(c)

11. Input the monochromatic gradation wave or monoscope signal from AUDIO/VIDEO IN jack (J501).
12. Turn the BRIGHT VR (RV305) and verify that there is only monochrome display with no colors in all of the maximum and minimum positions. If any color is present, readjust RV303 (R GAIN) and RV301 (B GAIN).

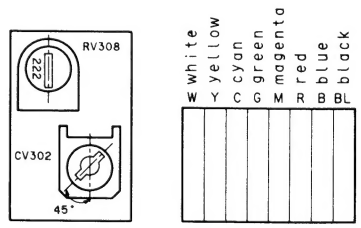
Note : It should be noted that when BRIGHT is darkened, color tends to appear.

13. Remove a ceramic capacitor to connected by G bias adjustment.
14. Input the color bar signal from AUDIO/VIDEO IN jack (J501).
15. Turn the BRIGHT VR (RV305) to maximum and turn the COLOUR VR (RV307) to minimum and verify that the screen changes normally. Lastly, place the respective controls in their center positions.

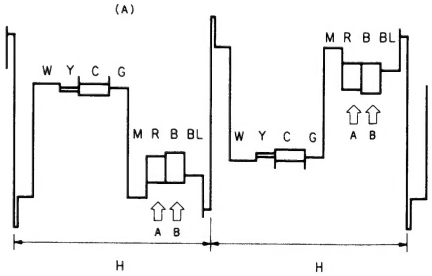
ANTI PAL ADJUSTMENT-1

Procedures :

1. Input the color bar signal from AUDIO/VIDEO IN jack (J501).
2. Connect a oscilloscope to TP308 (G).
3. Preadjust RV308 and CV302 as shown in the following figure (A).
4. Turn the COLOUR VR (RV307) and BRIGHT VR (RV305) to maximum.
5. Turn the T301 and RV308 and adjust so as completely overlaps on color bar signal (red (⇧ A) and blue (⇧ B) portions) by 2V/div. range of oscilloscope as shown in the following figure (B).



(A)



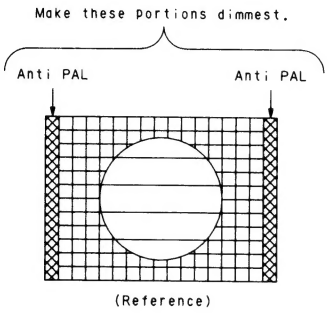
(B)

Note : Adjust so as completely overlaps on red and blue portions of color bar signal by 2V/div. range of oscilloscope.

ANTI PAL ADJUSTMENT-2

Procedures :

1. Input the philips pattern signal from the AUDIO/VIDEO IN jack (J501).
2. Turn CV302 and adjust so that the color of the anti PAL signal portions is dimmest on the screen.



Note : Anti PAL adjustment-1 and -2 is as each effect, repeat adjust few times.

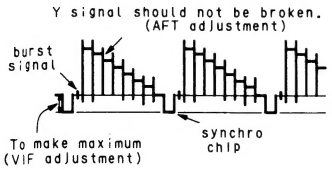
VIF ADJUSTMENT/AFT ADJUSTMENT

Note : These adjustments are not performed usually.
Never touch L204 and L205 of adjustment devices.
While, only when L204, L205 or capacitors around L204, L205 have been replaced, make the following simple adjustment.

— Simple adjustment —

Procedures :

1. Connect a ceramic capacitor (10000pF) between TP207 (SAW IN) and TP209 (GND).
2. Connect a jumper wire between TP210 (MUTE) and TP209 (GND).
3. Input the monochromatic gradation wave from TP101 (ANT IN).
4. Connect an oscilloscope to Q301 emitter.
5. Adjust L204 so that the SYNC signal is maximum (VIF adjustment).
6. Turn and L205 to adjust the level so that the screen is colored from monochrome without breaking of Y signal. (AFT adjustment) (Reference value : Vp-p of burst signal is about 60mV.)
7. Receive the broad casts of each channel, and check if the screen is colored after the synchronism is stopped with each channel.
8. Remove a ceramic capacitor and jumper wire to connected by items 1 and 2.



AGC ADJUSTMENT

Procedures :

1. Receive the TV broadcast.
2. Turn and adjust RV201 so that the snow noise is shown.
3. Reversely turn and set RV201 to the point where the snow noise disappears.
4. Receive the broadcast for each channel, and check if there is beat, image distortion of snow noise caused by mixed demodulation.
5. If any beat, image distortion of snow noise are observed, adjust RV201 again.

TUNING ADJUSTMENT

Procedures :

1. Short S104 (CH CALL).
2. Set S101 (BAND) to the VHF • LOW side to check with the screen if the display bar was turned green.
3. Receive the broadcast of 2CH by pushing S102 (CHANNEL −) or S103 (CHANNEL +).
4. Adjust RV104 so that the display bar is corresponded to the position of 2CH.
5. Receive the broadcast of S1CH, and adjust RV101 so that the display bar is corresponded to the S1CH.

Note : Since the items 4 and 5 will interfere each other, the adjustment is necessary for 2 to 3 times.

6. Receive the broadcasts of 2 to S1CH, and check if the display bar is corresponded to each channel.
7. Set S101 (BAND) to the VHF • HIGH side to check with the screen if the display bar was turned blue.
8. Receive the broadcast of S2CH by pushing S102 (CHANNEL−) or S103 (CHANNEL+).
9. Adjust RV105 so that the display bar is corresponded to the position of S2CH.
10. Receive the broadcast of S20CH, and adjust RV102 so that the display bar is corresponded to each channel.

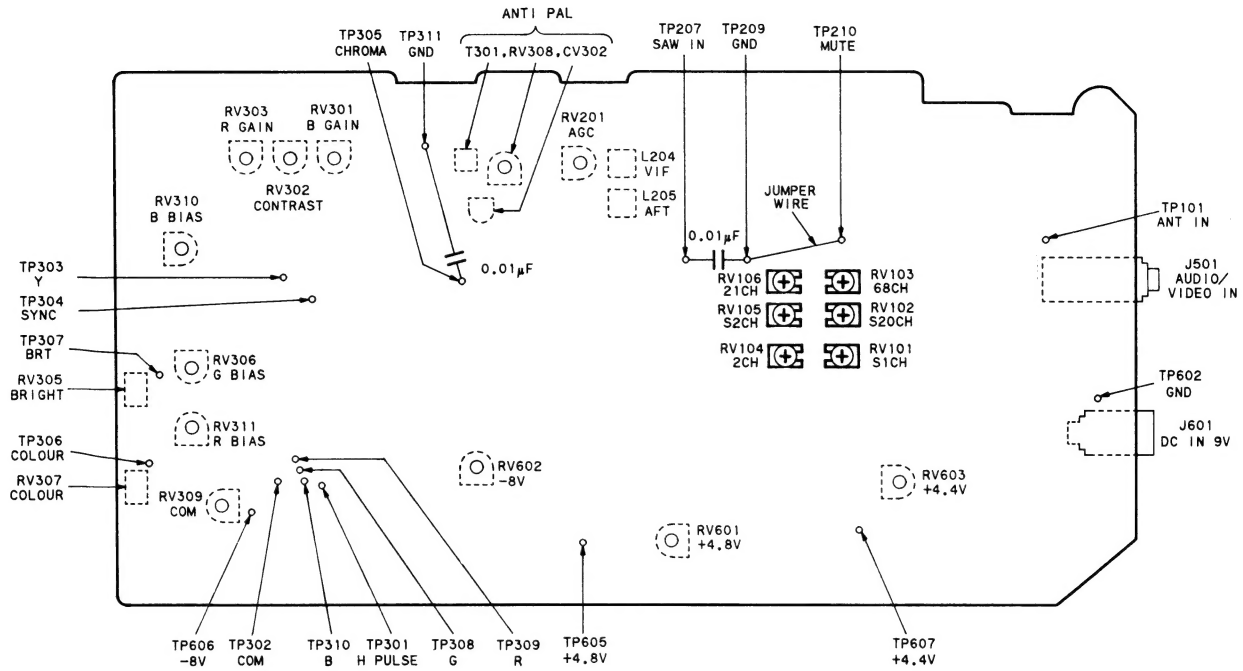
Note : Since the items 9 and 10 will interfare each other, the adjustment is necessary for 2 to 3 times.

11. Receive the broadcasts of S2 to S20CH, and check if the display bar is corresponded to each channel.
12. Set S101 (BAND) to the UHF side to check with the screen if the display bar was turned red.
13. Receive the broadcast of 21CH, and adjust RV106 so that the display bar is corresponded to the position of 21CH.
14. Receive the broadcast of 68CH, and adjust RV103 so that the display bar is corresponded to the position of 68CH.

Note : Since the items of 13 and 14 will interfere each other, the adjustment is necessary for 2 to 3 times.

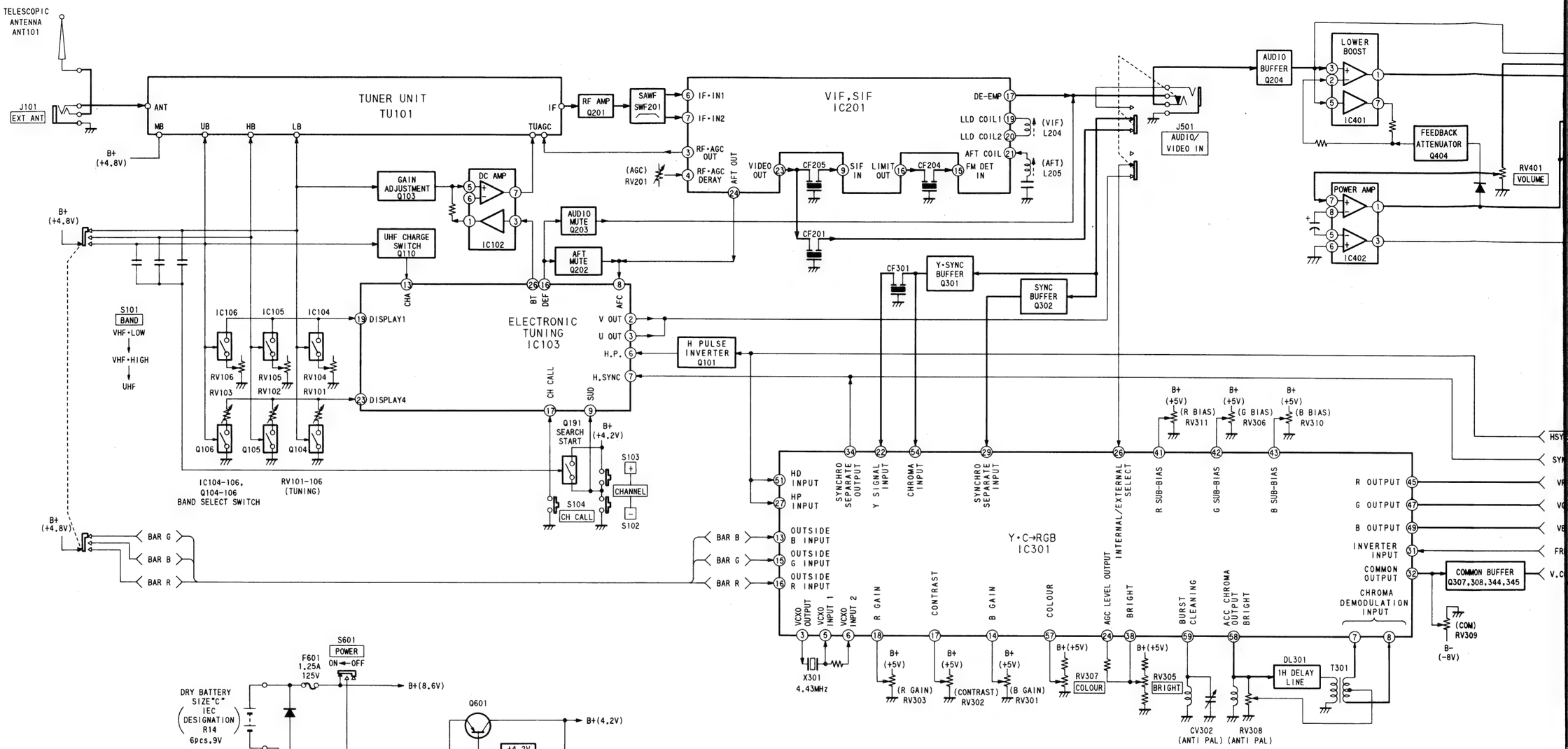
15. Receive the broadcasts of 21CH to 68CH, and check if the display bar is corresponded to the position of each channel.
16. Disconnect the S104 shorted in the above item 1.

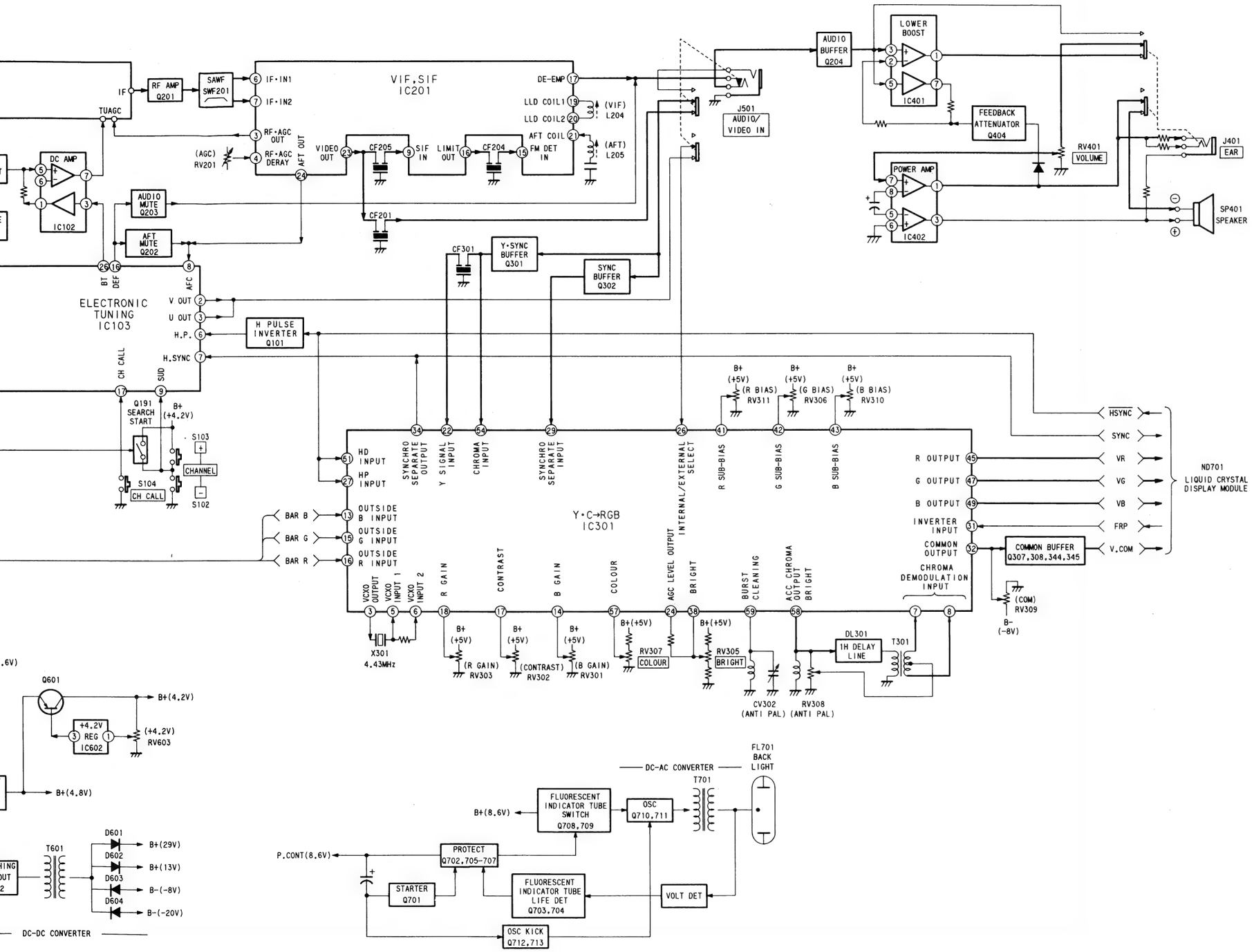
Adjustment Location : main board

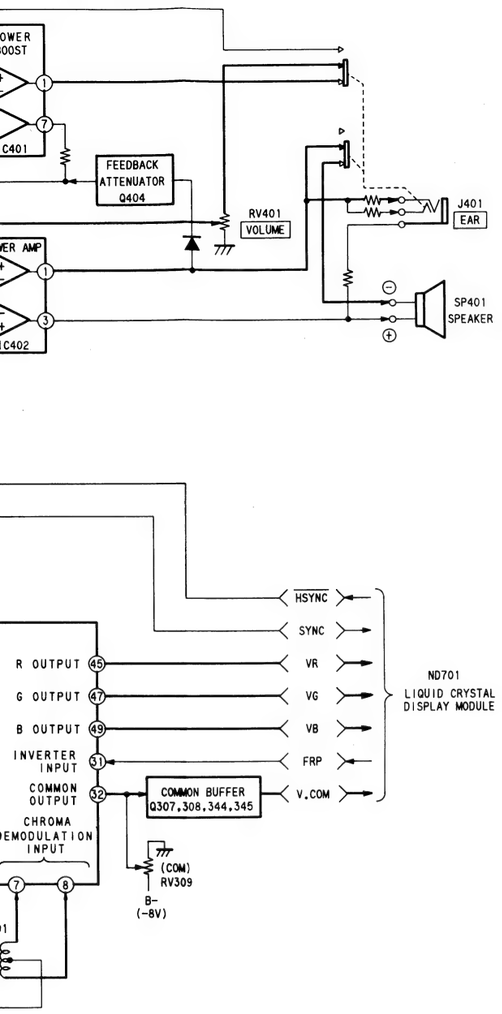


SECTION 4
DIAGRAMS

4-1. BLOCK DIAGRAM

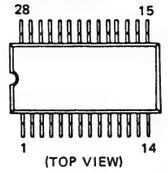



IF
TUAGC
RF AMP Q201
SAWF SWF201
IF·IN1
IF·IN2
RF·AGC OUT
RF·AGC DERAY
AFT OUT
(AGC) RV201
VIF,SIF IC201
VIDEO OUT
CF205
SIF IN
LIMIT OUT
CF204
FM DET IN
DE-EMP
LLD COIL1
LLD COIL2
(VIF) L204
AFT COIL
(AFT) L205
CF201
J501 AUDIO/VIDEO IN
AUDIO BUFFER Q204
LOWER BOOST
IC401
FEEDBACK ATTENUATOR Q404
RV401 VOLUME
J401 EAR
POWER AMP
IC402
SP401 SPEAKER
DC AMP
IC102
AUDIO MUTE Q203
AFT MUTE Q202
CF301
Y·SYNC BUFFER Q301
SYNC BUFFER Q302
BT
DEF
AFC
ELECTRONIC TUNING IC103
V OUT
U OUT
H.P.
H.SYNC
H PULSE INVERTER Q101
CH CALL
SUD
Q191 SEARCH START
B+ (+4.2V)
S103
CHANNEL
S104
CH CALL
S102
B+ (+5V) (R BIAS) RV311
B+ (+5V) (G BIAS) RV306
B+ (+5V) (B BIAS) RV310
HD INPUT
HP INPUT
OUTSIDE B INPUT
OUTSIDE G INPUT
OUTSIDE R INPUT
BAR B
BAR G
BAR R
Y·C→RGB IC301
SYNCHRO SEPARATE OUTPUT
Y SIGNAL INPUT
CHROMA INPUT
SYNCHRO SEPARATE INPUT
INTERNAL/EXTERNAL SELECT
R SUB-BIAS
G SUB-BIAS
B SUB-BIAS
VCXO OUTPUT
VCXO INPUT 1
VCXO INPUT 2
R GAIN
CONTRAST
B GAIN
COLOUR
AGC LEVEL OUTPUT
BRIGHT
BURST CLEANING
ACC CHROMA OUTPUT BRIGHT
CHROMA DEMODULATION INPUT
X301 4.43MHz
B+ (+5V) (R GAIN) RV303
B+ (+5V) (CONTRAST) RV302
B+ (+5V) (B GAIN) RV301
B+(+5V) RV307 COLOUR
B+(+5V) RV305 BRIGHT
CV302 (ANTI PAL)
RV308 (ANTI PAL)
DL301 1H DELAY LINE
T301
HSYNC
SYNC
VR
VG
VB
FRP
V.COM
R OUTPUT
G OUTPUT
B OUTPUT
INVERTER INPUT
COMMON OUTPUT
COMMON BUFFER Q307,308,344,345
(COM) RV309
B- (-8V)
ND701 LIQUID CRYSTAL DISPLAY MODULE
Q601
B+(4.2V)
+4.2V REG IC602
(+4.2V) RV603
B+(4.8V)
T601
D601
D602
D603
D604
B+(29V)
B+(13V)
B-(-8V)
B-(-20V)
DC-DC CONVERTER
DC-AC CONVERTER
FL701 BACK LIGHT
T701
B+(8.6V)
FLUORESCENT INDICATOR TUBE SWITCH Q708,709
OSC Q710,711
P.CONT(8.6V)
PROTECT Q702,705-707
STARTER Q701
FLUORESCENT INDICATOR TUBE LIFE DET Q703,704
VOLT DET
OSC KICK Q712,713



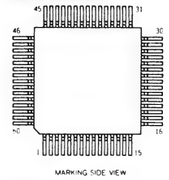
4-2. SEMICONDUCTOR LEAD LAYOUTS

AN5707NS



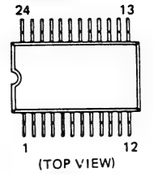
(TOP VIEW)

M52003AFP



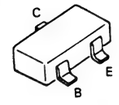
MARKING SIDE VIEW

TA8805F

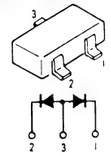


(TOP VIEW)

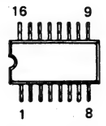
DTC143XK
2SA1162-G
2SA1344
2SC1623
2SC2714-Y
2SC3397
2SC3398
2SC4047



MA152WA

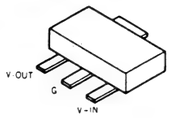


CX20159

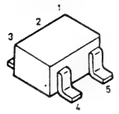


(TOP VIEW)

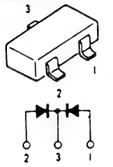
M5236ML



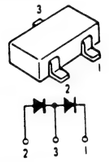
TC4S66F



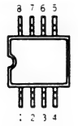
MA152WK



DA204U

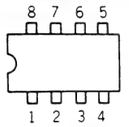


LM2904M



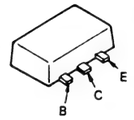
(TOPVIEW)

NJM2073D

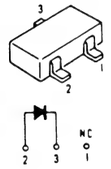


(TOP VIEW)

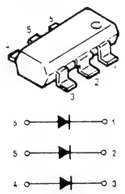
DTB113ZK
2SB798-DL
2SC3647S
2SD999-CLCK



RD10M-B2
RD5.1M-B2
SB20-03P



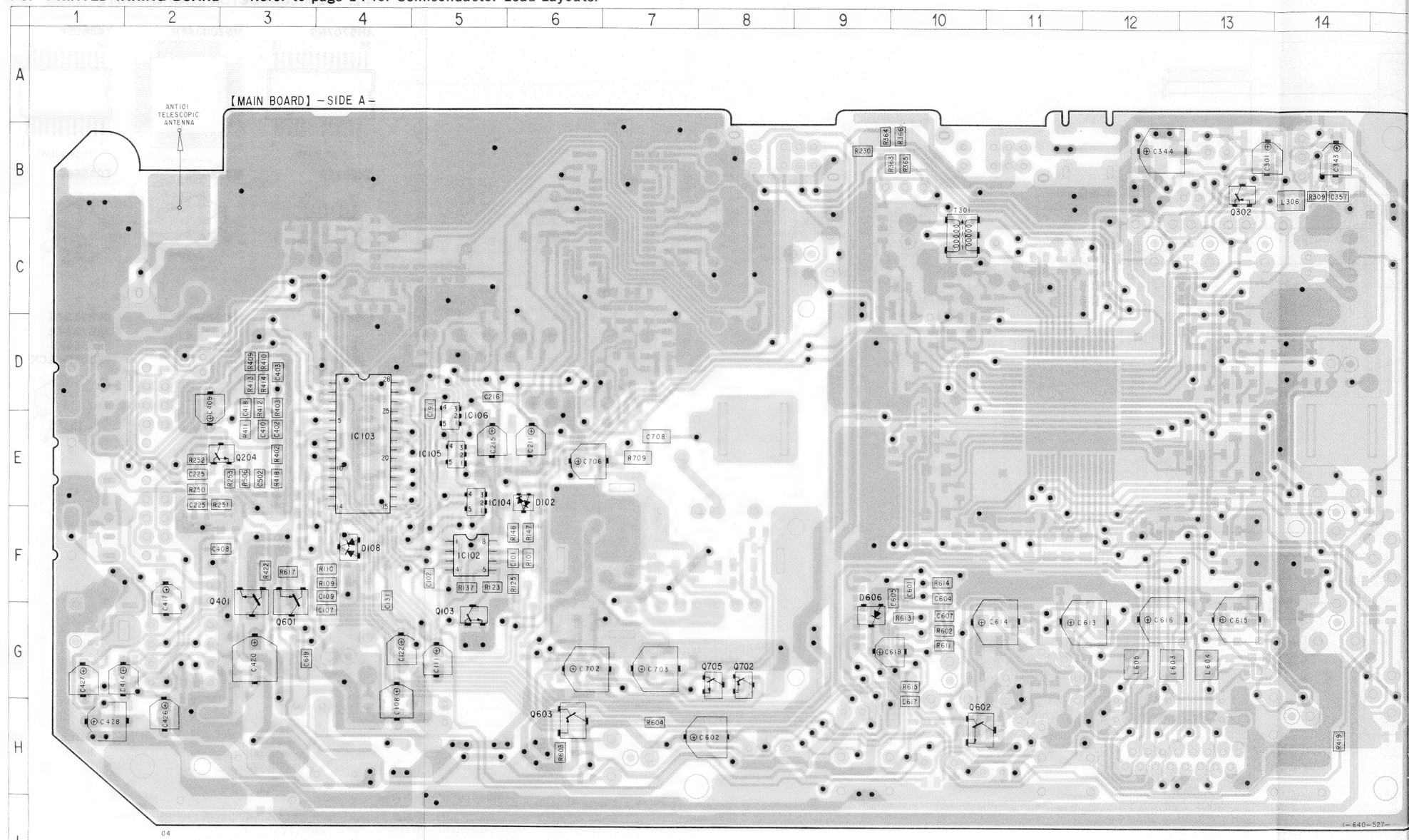
IMN10



• Semiconductor Location

Ref. No.	Location
D102	E-6
D104	F-27
D106	F-26
D108	F-4
D191	E-26
D403	F-28
D404	G-29
D601	G-20
D602	F-20
D603	G-20
D604	G-19
D605	G-30
D606	G-9
D701	G-25
D702	G-25
D703	E-25
D704	E-25
IC102	F-5
IC103	E-4
IC104	E-5
IC105	E-5
IC106	E-5
IC201	B-24
IC301	D-20
IC401	E-28
IC402	G-29
IC601	G-22
IC602	G-28
Q101	F-28
Q103	G-5
Q104	E-27
Q105	E-27
Q106	D-27
Q110	F-27
Q191	F-27
Q201	D-24
Q202	C-27
Q203	C-27
Q204	E-3
Q301	B-18
Q302	B-13
Q305	G-18
Q306	G-18
Q307	G-18
Q308	G-18
Q401	F-3
Q404	F-28
Q601	F-3
Q602	H-10
Q603	H-6
Q701	G-25
Q702	G-8
Q703	E-25
Q704	F-25
Q705	G-8
Q706	G-25
Q707	F-25
Q708	G-23
Q709	G-23
Q710	F-23
Q711	F-24
Q712	G-24
Q713	G-24

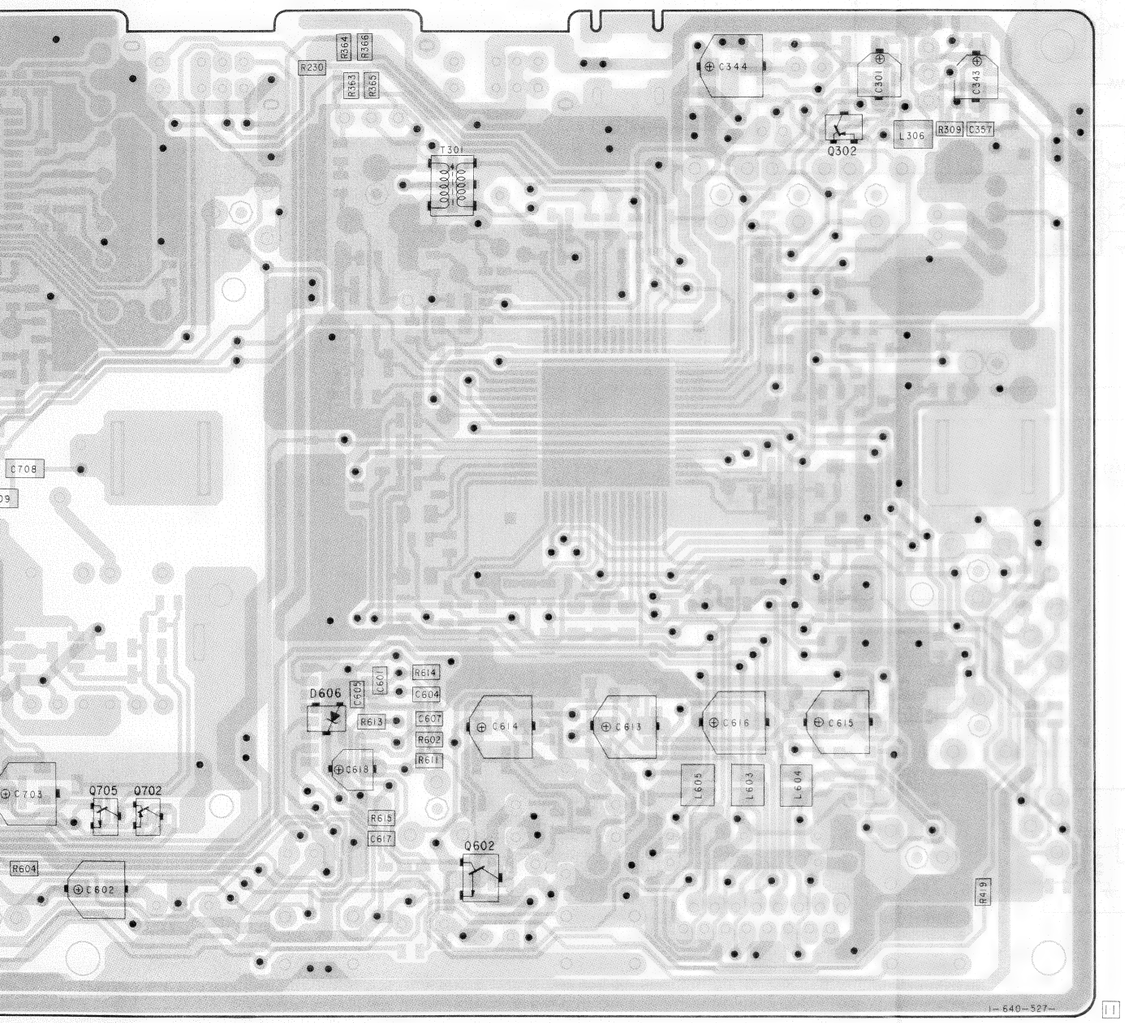
4-3. PRINTED WIRING BOARD • Refer to page 14 for Semiconductor Lead Layouts.

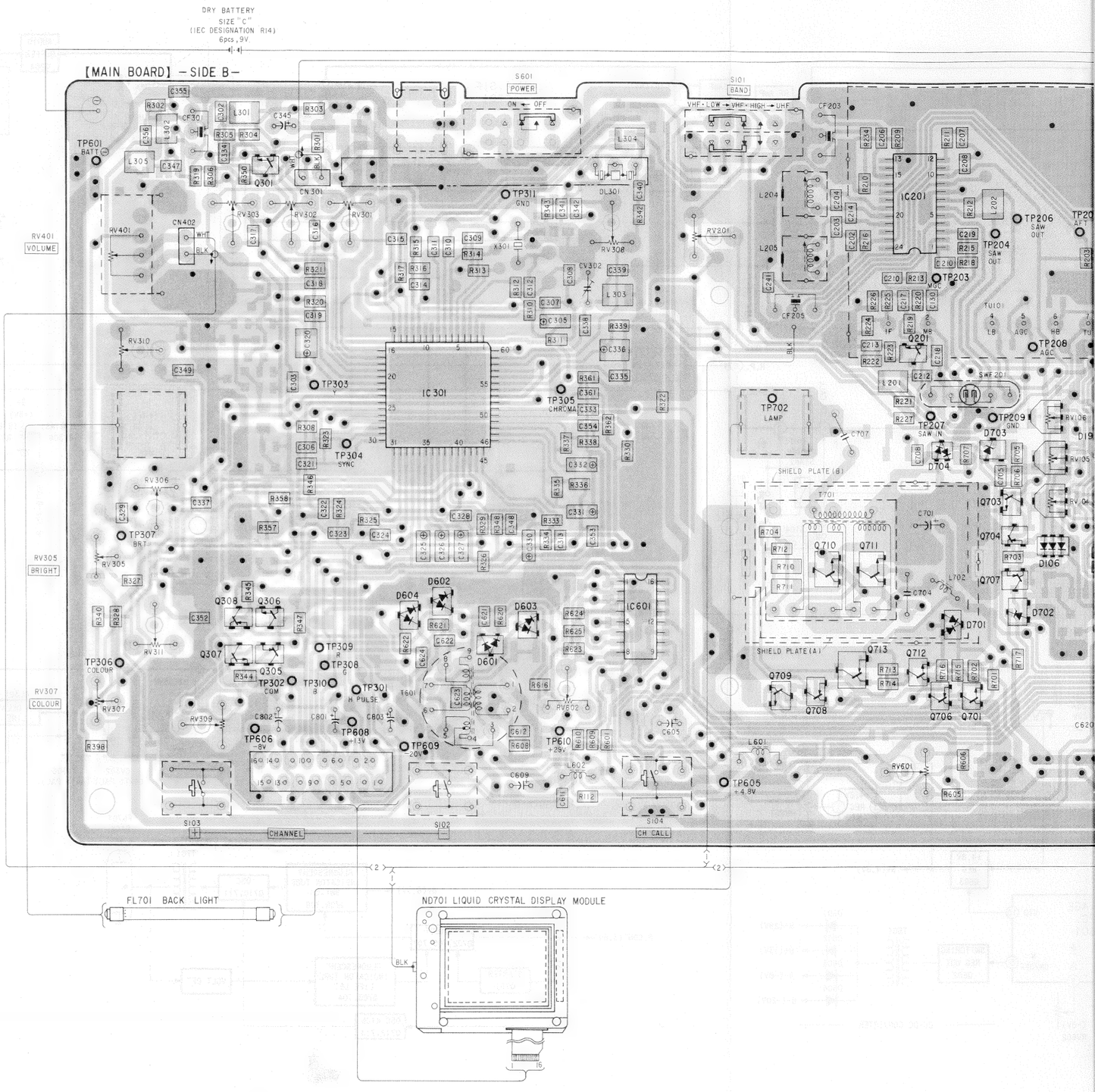


Note:

- ○—— : parts extracted from the com
- ⊢ indicates side identified with p
- ● : Through hole.
- ▒▒ : Pattern on the side which is seen.
- ▒▒ : Pattern of the rear side.

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

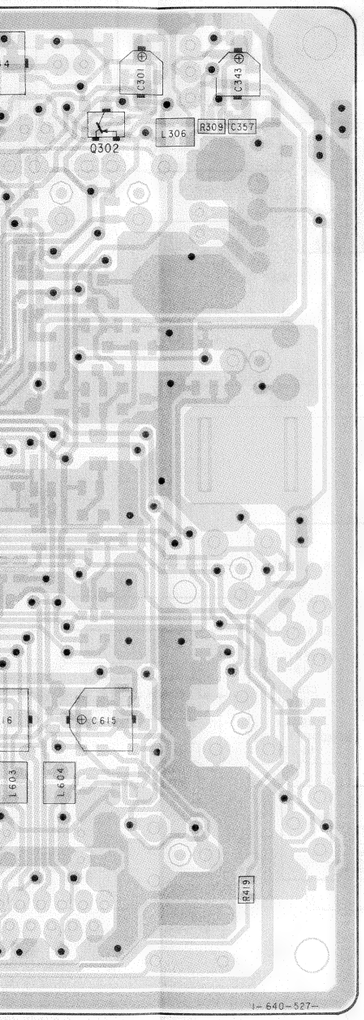


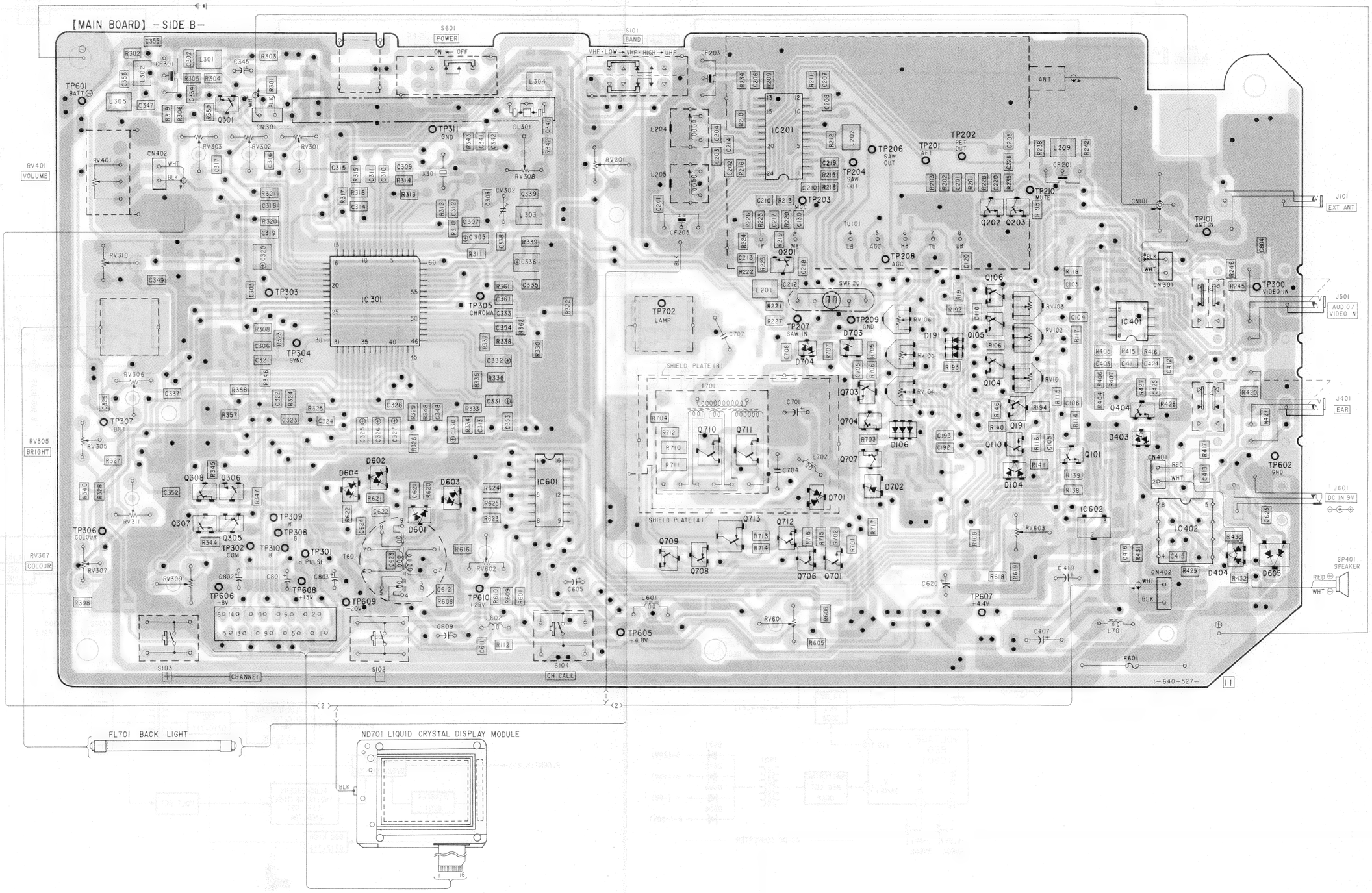


13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

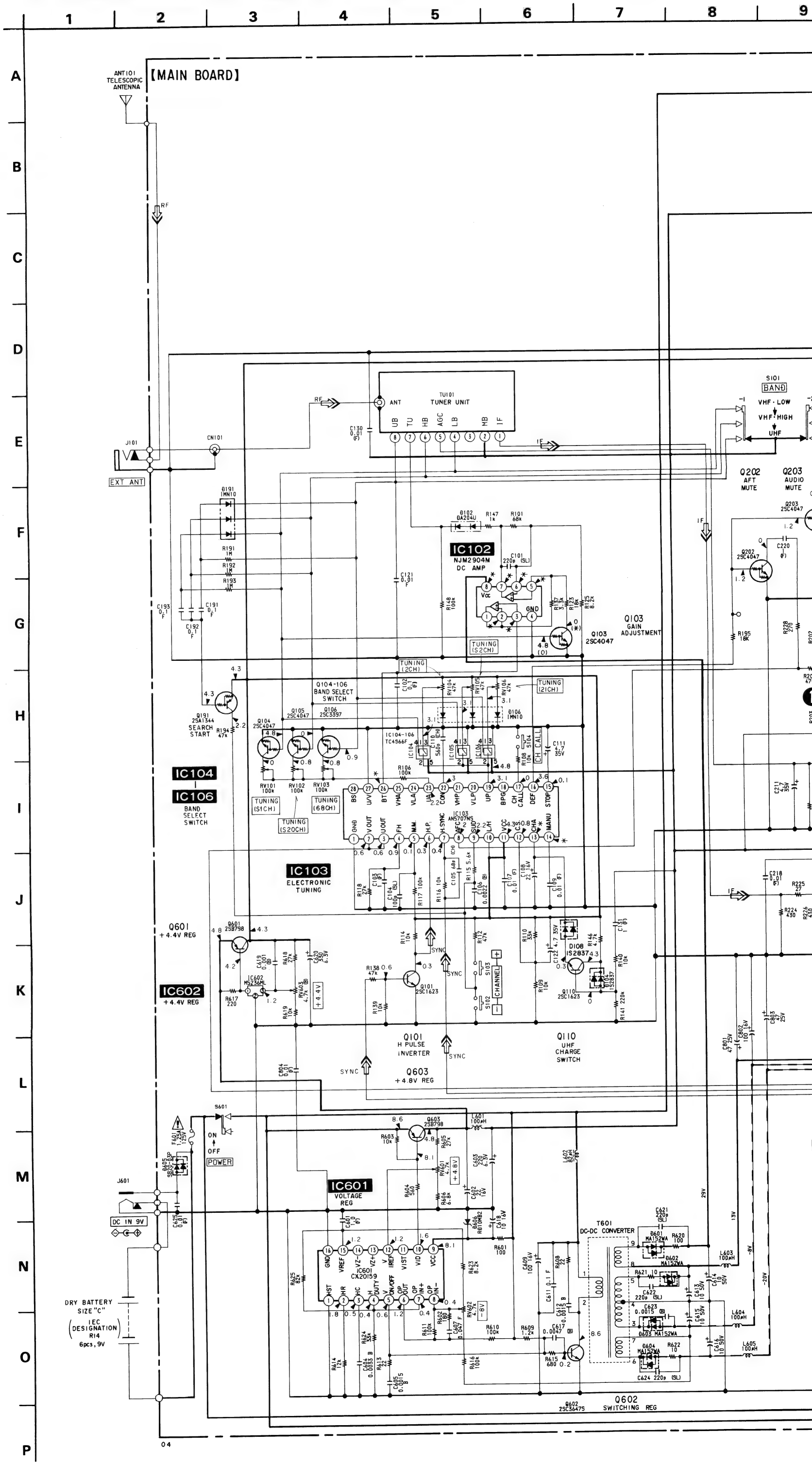
DRY BATTERY
SIZE "C"
(IEC DESIGNATION R14)
6pcs.,9V

[MAIN BOARD] – SIDE B –





4-4. SCHEMATIC DIAGRAM ● Refer to page 23 for IC Block Diagrams.



Q401
RIPPLE
FILTER

Q204
AUDIO
BUFFER

S101
BAND
VHF-LOW
VHF-HIGH
UHF

Q202
AFT
MUTE

Q203
AUDIO
MUTE

IC102
NJM2904M
DC AMP

Q103
GAIN
ADJUSTMENT

IC201
VIF, SIF

Q110
UHF
CHARGE
SWITCH

Q301
CHROMA
BUFFER
INVERTER

Q302
Y. SYNC
BUFFER

Q701
STARTER

Q702,705 – 707
PROTECT

Q708,709
FL TUBE
LIGHTING
SWITCH

Q710,711
OSC

Q602
SWITCHING REG

Q703,704
FL TUBE
LIFT DET

Q712,713
OSC KICK

T601
DC-DC CONVERTER

T701
DC-AC CONVERTER

FL701
BACK
LIGHT

LCD UNIT

CN801
H. SYNC
FRP
SYNC
+13V
-20V
VB
VR
VG
GND
+5V
-8V
Y. COM
(Y. SYNC)
(VIDEO DET)
(N. C)

Q401
RIPPLE FILTER

IC401
BASS BOOST

IC401
NJM2904M

IC402
NJM2073D

IC402
POWER AMP

Q204
AUDIO BUFFER

IC301
IC301
M52003AFP
Y,C → RGB

Q305-308
COMMON BUFFER

LCD UNIT

CN801

H.SYNC	1
FRP	2
SYNC	3
+13V	4
-20V	5
VB	6
VR	7
VG	8
GND	9
+5V	10
-8V	11
Y.COM	12
	13
(Y.SYNC)	14
(VIDEO DET)	15
(N.C)	16

• Waveforms

1 IC201 (23)

2 Q301 Emitter

3 Q302 Emitter

4 IC301 (22)

5 IC301 (27)

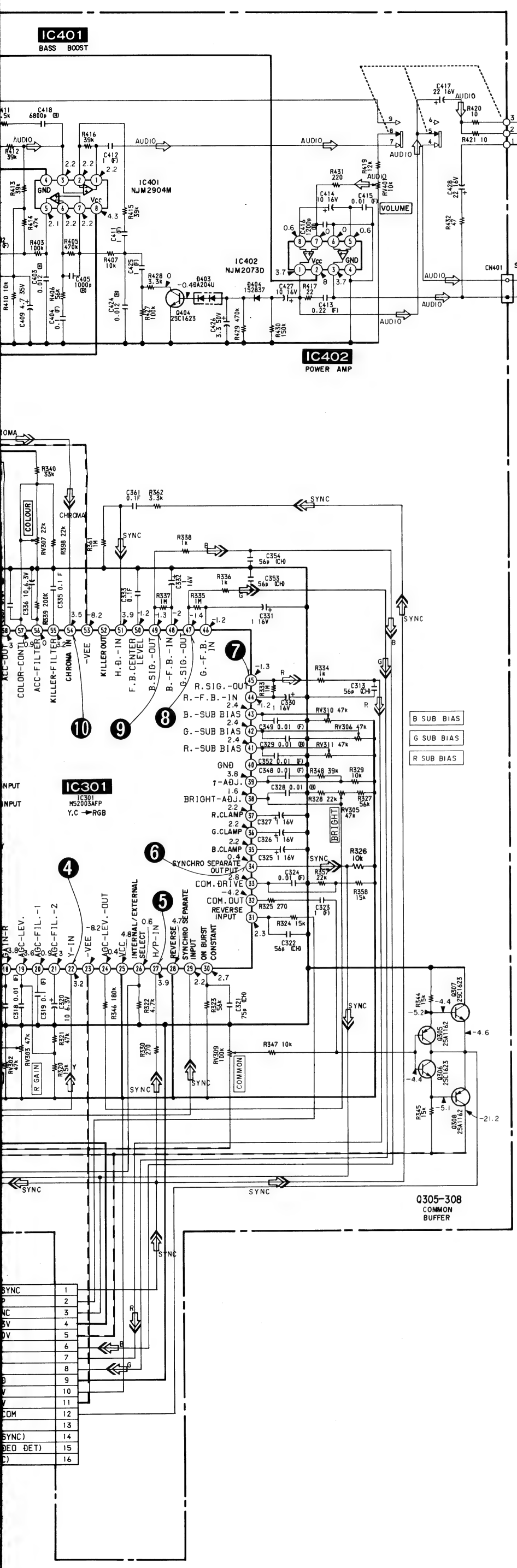
6 IC301 (34)

Note:

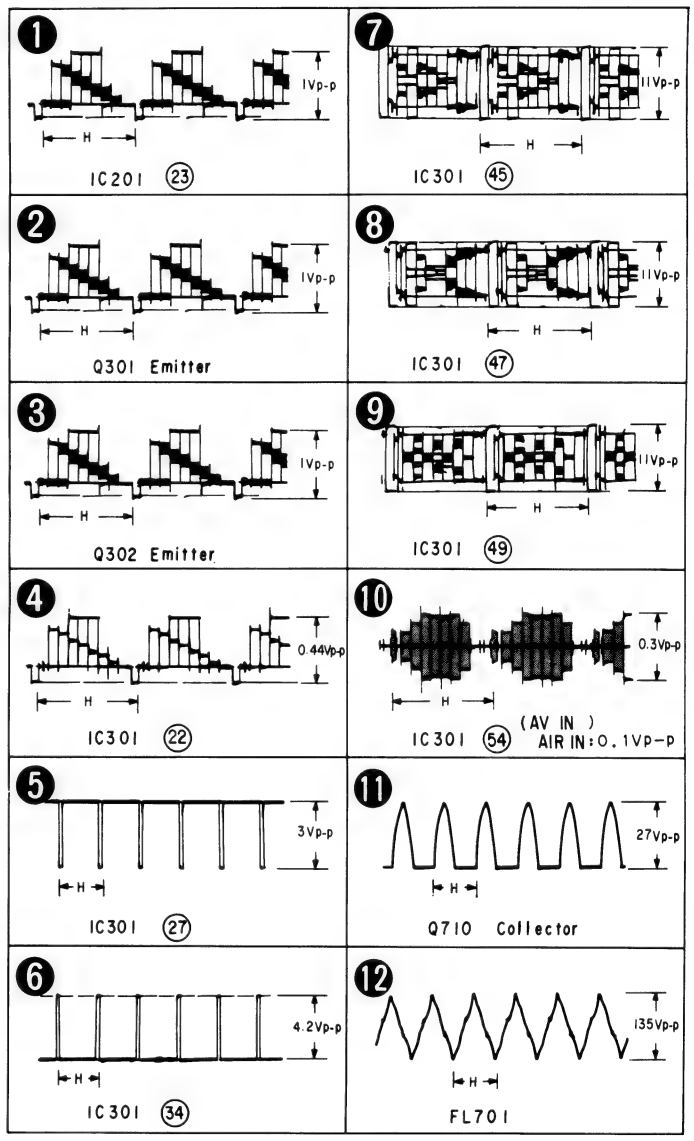
- All capacitors are in μF unl 50WV or less are not indi and tantalums.
- All resistors are in Ω and specified.
- % : indicates tolerance.

Note: The components iden line with mark ⚠ are Replace only with part

- ▬▬ : B+ Line
- ▬ ▬ : B− Line
- ▭ : adjustment for repa
- Power voltage is dc 9V and fe from external power voltage ja
- Voltage and waveforms are d no-signal (detuned) conditions no mark : VHF • LOW ( ) : UHF
- Voltages are taken with a V Voltage variations may be tion tolerances.
- Waveforms are taken with a Voltage variations may be tion tolerances.
- Circled numbers refer to wa



• Waveforms



Note:

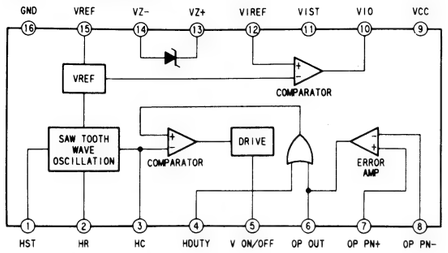
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

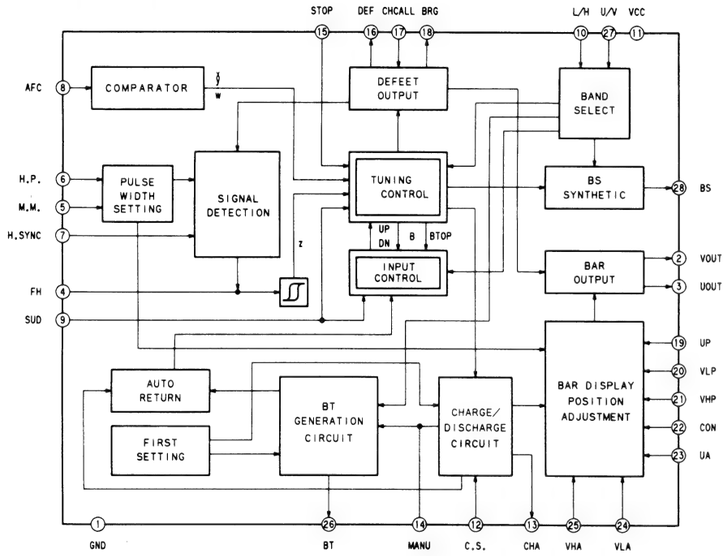
- ——— : B+ Line
- - - - : B− Line
- ▭ : adjustment for repair.
- Power voltage is dc 9V and fed with regulated dc power supply from external power voltage jack.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : VHF • LOW
  ( ) : UHF
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.

• IC Block Diagrams

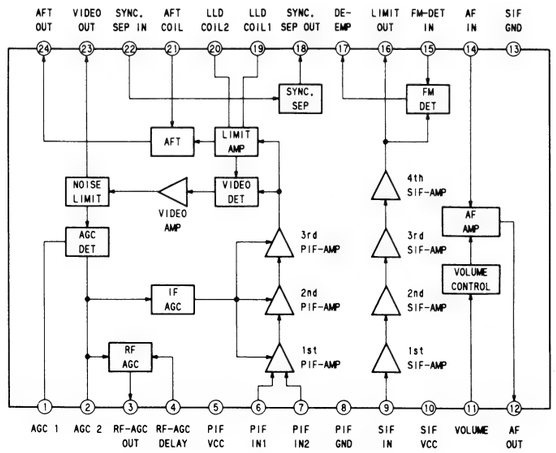
IC601 CX20159



IC103 AN5707NS



IC201 TA8805F



SECTION 5
PIN DESCRIPTION

5-1. PIN DESCRIPTION

• IC301 M52003AFP

Pin No.	Pin Name	Pin Description
1	NC	
2	APC FILTER	This pin determines the APC time constant of VCXO.
3	VCXO-OUT	Output of VCXO oscillator.
4	VCXO-MONI	This pin provides monitor output of VCXO oscillator. This is open emitter output.
5	VCXO-IN-1	Feedback input to VCXO generator.
6	VCXO-IN-2	Phase Delayed input of the signal from Pin ⑤.
7	CHROMA DEMODULATION INPUT	Input pin for the color difference demodulator for B-Y signal.
8	CHROMA DEMODULATION INPUT	Input pin for the color difference demodulator for R-Y signal.
9	SECAM-IN	This pin receives output of the color difference decoder for SECAM B-Y. When the color killer is activated, the internal switch will select the SECAM signal side.
10	SECAM-IN	This pin receives output of the color difference decoder for SECAM R-Y.
11	PICTURE QUALITY ADJUSTMENT V	Picture Quality Adjustment pin. Increase the voltage to have sharper picture. Decrease it to have more soft picture.
12	CLAMP VOLUME	Used to adjust so that the internal signal is matched with the external RGB signal in the clamp level.
13	EXTERNAL B INPUT	External B Signal input. This input is $0.8V_{P-P}$ standard.
14	GAIN-B	Used to adjust the gain of B signal to ensure white balance. This input is 3.5V standard. Increase the voltage to reduce the gain.
15	EXTERNAL G INPUT	External G Signal input.
16	EXTERNAL R INPUT	External R Signal input.
17	CONT. -ADJ.	Used to adjust the contrast of the internal signal. Increase the voltage to have higher contrast. Decrease it to have lower contrast.
18	GAIN-R	Used to adjust the gain of R signal to ensure white balance.
19	AGC-LEV.	Used to set the point at which AGC operates.
20	AGC-FIL.-1	AGC Filter pin.
21	AGC-FIL.-2	AGC Filter pin.
22	Y-IN	Luminance Signal Input pin. Pedestal clamp is applied. This input is $0.5V_{P-P}$ standard and comes in as synchronized negatively.
23	$-V_{EE}$	Connection pin for −7.5V power.
24	AGC-LEV. -OUT	This pin outputs the point at which AGC operates. When AGC operates, the voltage will be reduced.
25	V_{CC}	Connection pin for +4.5V power for the interface unit.
26	INTERNAL/EXTERNAL SELECT	Used to switch between the internal and external signals. Set this pin "High" to select external signal. Set it to "Low" to select internal signal.
27	H/P-IN	Input pin for Synchronizing signal from an external source. When used simultaneously with synchronous separation output, this signal must rise earlier than the output.
28	REVERSE	Used to control the reverse polarity of output. Set this pin "High" to have normal white. Set it "Low" to have normal black.
29	SYNCHRO SEPARATE INPUT	Synchronous Separation input. This input is $1V_{P-P}$ video signal as synchronized negatively.
30	ON BURST CONSTANT	Time Constant which detemines the width of the burst gate. The burst gate pulse having the time determined by this constant is generated at the trailing edge of synchronous separation output.

Pin No.	
31	REVE
32	COM.
33	COM.
34	SYNC OUTP
35	B. CLA
36	G. CLA
37	R. CLA
38	BRIGH
39	γ-ADJ.
40	GND
41	R. -SU
42	G. -SU
43	B. -SU
44	R. -F.
45	R. SIG.
46	G. -F.
47	G. SIG.
48	B. -F.
49	B. SIG.
50	F. B. C
51	H. D. -
52	KILLE
53	$-V_{EE}$
54	CHRON
55	KILLE
56	ACC FI
57	COLOR
58	ACC-OU
59	BURST
60	V_{CC}

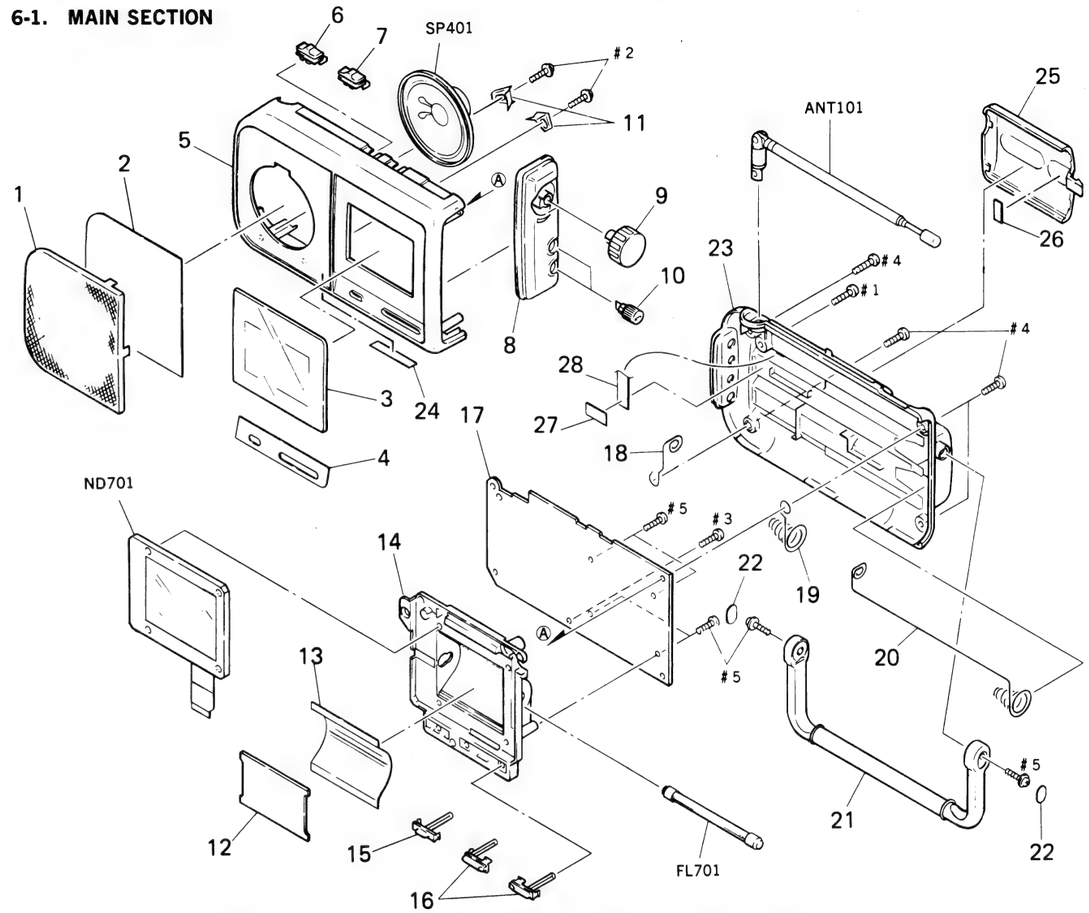
Pin No.	Pin Name	Pin Description
31	REVERSE INPUT	Output Reversing Pulse input. This reverses common and RGB outputs at the same time. The polarity of RGB output depends on reverse polarity control.
32	COM. OUT	Common Electrode Drive Output pin.
33	COM. DRIVE	Used to set the amplitude of common electrode drive output.
34	SYNCHRO SEPARATE OUTPUT	Synchronous Separation Output pin. This is open collector output and is synchronized positively. A load resistor should be connected to use this output.
35	B. CLAMP	Connection pin for B signal clamp capacitance.
36	G. CLAMP	Connection pin for G signal clamp capacitance.
37	R. CLAMP	Connection pin for R signal clamp capacitance.
38	BRIGHT-ADJ.	Brightness Adjustment pin. Increase the voltage to have whiter picture.
39	γ-ADJ.	Used to set the gamma amount of the gamma amplifier. Connect this pin to the power when gamma amplifier is not required.
40	GND	Grounding pin. This pin should be connected to GND.
41	R. -SUB BIAS	Used to set the bias amount of R signal.
42	G. -SUB BIAS	Used to set the bias amount of G signal.
43	B. -SUB BIAS	Used to set the bias amount of B signal.
44	R. -F. B. -IN	Pin for DC Feedback of R output. R output is integrated and then input to this pin. This pin should be connected to $-V_{EE}$ when not used.
45	R. SIG. -OUT	R Signal Output pin. The inverted signal is output.
46	G. -F. B. -IN	Pin for DC Feedback of G output.
47	G. SIG. -OUT	G Signal Output pin.
48	B. -F. B. -IN	Pin for DC Feedback of B output.
49	B. SIG. -OUT	B Signal Output pin.
50	F. B. CENTER LEVEL	Output Feedback Reference Voltage pin. When this voltage is varied, the center voltage of output is varied. This pin should be grounded with the capacitance for stabilization.
51	H. D. -IN	This pin inputs the HD signal which drives the flip flop for line pulse generation. The F/F changes at the rising edge of HD.
52	KILLER OUT	Killer Signal output. When the killer is activated, this output will be High.
53	$-V_{EE}$	Connect this pin to -7.5V power. It has the same potential with Pin ㉓.
54	CHROMA IN	Chroma Signal Input pin. This input is burst $100mV_{P-P}$ standard.
55	KILLER FILTER	Killer Filter Connecting pin.
56	ACC FILTER	Used to set the ACC time constant.
57	COLOR-CONTROL	Used to control the color level. Increase the voltage to increase the color saturation.
58	ACC-OUT	This pin outputs chroma signal under ACC. This output is sent through 1H delay line and then input into the demodulator. Burst removed signal is output.
59	BURST CLEANING	Connecting pin for the burst cleaning coil. The demodulation angle is adjusted by adjusting this coil.
60	V_{CC}	This pin is connected to $+4.5$V power. Video Chroma System Power pin.

SECTION 6
EXPLODED VIEW

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE)...(RED)
  ↑ Parts Color ↑ Cabinet's Color
- Hardware(# mark) list is given in the last of this parts list.

6-1. MAIN SECTION



Ref. No.	Part No.	Description	Remark
1	4-032-250-01	GRILLE, SPEAKER	
2	4-030-634-01	NET, SPEAKER	
3	4-032-595-01	FILTER	
4	4-030-630-01	PLATE, CONTROL	
5	4-032-588-01	CABINET (FRONT)	
6	4-030-831-01	KNOB, BAND SW	
7	4-030-831-11	KNOB, POWER SW	
8	4-031-773-01	PLATE, SIDE	
9	4-030-640-01	KNOB, VOLUME	
10	4-030-641-01	KNOB, BRIGHT/COLOUR	
11	3-840-975-00	CLAW, SPEAKER	
12	* 4-030-646-01	ILLUMINATOR	
13	* 4-030-644-01	REFLECTOR	
14	* 4-030-651-01	HOLDER, REFLECTOR	
15	4-030-638-01	BUTTON, CH CALL	
16	4-030-639-01	BUTTON, TUNING +/-	
17	* A-3016-111-A	MAIN BOARD, COMPLETE	
18	4-030-636-01	TERMINAL, BATTERY PLUS	
19	4-030-635-01	SPRING, BATTERY COIL	
20	4-030-642-01	TERMINAL, BATTERY	
21	X-4029-349-1	HANDLE ASSY	
22	4-030-632-01	LABEL, HANDLE	
23	X-4029-788-1	CABINET (REAR) SUB ASSY	
24	* 4-032-586-01	LABEL, MODEL NUMBER (CV)	
25	4-030-647-01	LID, BATTERY CASE	
26	9-911-837-XX	CUSHION, BATTERY	
27	3-831-441-XX	CUSHION (A)	
28	4-031-060-01	RIBBON, BATTERY	
ANT101	1-501-494-11	ANTENNA, TELESCOPIC	
FL701	1-519-563-11	INDICATOR TUBE, FLUORESCENT	
ND701	1-808-658-11	DISPLAY MODULE, LIQUID CRYSTAL	
SP401	1-544-548-11	SPEAKER (8CM)	

SECTION 7
ELECTRICAL PARTS LIST

MAIN

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- CAPACITORS
  uF: μF
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: μH
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD....

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description		Remark
*	A-3016-111-A	MAIN BOARD, COMPLETE		
		**********		
*	1-573-957-11	PIN, CONNECTOR		
*	1-690-313-11	CABLE (WITH CONNECTOR)		
	4-030-645-01	SPRING, HOLDER		
		< CAPACITOR >		
C101	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C102	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C103	1-164-346-11	CERAMIC CHIP 1uF		16V
C104	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C105	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C106	1-163-013-91	CERAMIC CHIP 0.0022uF	10%	50V
C107	1-163-031-91	CERAMIC CHIP 0.01uF		50V
C108	1-126-395-11	ELECT 22uF	20%	16V
C109	1-163-031-91	CERAMIC CHIP 0.01uF		50V
C110	1-163-135-00	CERAMIC CHIP 560PF	5%	50V
C111	1-126-603-11	ELECT CHIP 4.7uF	20%	35V
C121	1-163-031-91	CERAMIC CHIP 0.01uF		50V
C122	1-126-603-11	ELECT CHIP 4.7uF	20%	35V
C130	1-163-031-91	CERAMIC CHIP 0.01uF		50V
C131	1-164-346-11	CERAMIC CHIP 1uF		16V
C191	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C192	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C193	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C201	1-163-009-11	CERAMIC CHIP 0.001uF	10%	50V
C202	1-163-009-11	CERAMIC CHIP 0.001uF	10%	50V
C203	1-163-253-91	CERAMIC CHIP 120PF	5%	50V
C204	1-163-253-91	CERAMIC CHIP 120PF	5%	50V
C205	1-163-019-00	CERAMIC CHIP 0.0068uF	10%	50V
C206	1-163-239-91	CERAMIC CHIP 33PF	5%	50V
C207	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C208	1-164-005-11	CERAMIC CHIP 0.47uF		25V
C209	1-164-346-11	CERAMIC CHIP 1uF		16V
C210	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C211	1-126-603-11	ELECT CHIP 4.7uF	20%	35V
C212	1-163-009-11	CERAMIC CHIP 0.001uF	10%	50V
C213	1-163-031-91	CERAMIC CHIP 0.01uF		50V
C214	1-163-085-00	CERAMIC CHIP 2PF		50V
C215	1-124-779-00	ELECT CHIP 10uF	20%	16V
C216	1-163-031-91	CERAMIC CHIP 0.01uF		50V
C217	1-163-009-11	CERAMIC CHIP 0.001uF	10%	50V
C218	1-163-031-91	CERAMIC CHIP 0.01uF		50V
C219	1-163-031-91	CERAMIC CHIP 0.01uF		50V
C220	1-164-346-11	CERAMIC CHIP 1uF		16V
C224	1-163-009-11	CERAMIC CHIP 0.001uF	10%	50V
C225	1-164-005-11	CERAMIC CHIP 0.47uF		25V
C226	1-164-005-11	CERAMIC CHIP 0.47uF		25V
C241	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C301	1-126-205-11	ELECT CHIP 47uF	20%	6.3V
C302	1-163-108-00	CERAMIC CHIP 43PF	5%	50V
C303	1-164-346-11	CERAMIC CHIP 1uF		16V
C305	1-135-091-00	TANTALUM CHIP 1uF	20%	16V
C306	1-163-017-00	CERAMIC CHIP 0.0047uF	5%	50V
C307	1-163-137-00	CERAMIC CHIP 680PF	5%	50V
C308	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C309	1-163-115-00	CERAMIC CHIP 82PF	5%	50V
C310	1-163-009-11	CERAMIC CHIP 0.001uF	10%	50V
C311	1-163-009-11	CERAMIC CHIP 0.001uF	10%	50V
C312	1-163-239-91	CERAMIC CHIP 33PF	5%	50V
C313	1-163-245-11	CERAMIC CHIP 56PF	5%	50V
C314	1-163-021-91	CERAMIC CHIP 0.01uF	10%	50V
C315	1-163-021-91	CERAMIC CHIP 0.01uF	10%	50V
C316	1-163-031-91	CERAMIC CHIP 0.01uF		50V
C317	1-163-021-91	CERAMIC CHIP 0.01uF	10%	50V

MAIN

Ref. No.	Part No.	Description			Remark
C318	1-163-031-91	CERAMIC CHIP	0.01uF		50V
C319	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C320	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C321	1-163-114-00	CERAMIC CHIP	75PF	5%	50V
C322	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C323	1-164-346-11	CERAMIC CHIP	1uF		16V
C324	1-163-031-91	CERAMIC CHIP	0.01uF		50V
C325	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C326	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C327	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C328	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C329	1-163-031-91	CERAMIC CHIP	0.01uF		50V
C330	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C331	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C332	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C333	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C334	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C335	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C336	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C337	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C338	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C339	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C340	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C341	1-163-239-91	CERAMIC CHIP	33PF	5%	50V
C342	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C343	1-126-207-11	ELECT CHIP	33uF	20%	4V
C344	1-126-204-11	ELECT CHIP	47uF	20%	16V
C345	1-126-176-11	ELECT	220uF	20%	10V
C347	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C348	1-163-031-91	CERAMIC CHIP	0.01uF		50V
C349	1-163-031-91	CERAMIC CHIP	0.01uF		50V
C352	1-163-031-91	CERAMIC CHIP	0.01uF		50V
C353	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C354	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C355	1-163-239-91	CERAMIC CHIP	33PF	5%	50V
C356	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C357	1-163-253-91	CERAMIC CHIP	120PF	5%	50V
C361	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C402	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C403	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V
C404	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C405	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C407	1-124-360-00	ELECT	1000uF	20%	16V
C408	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C409	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C410	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C411	1-164-346-11	CERAMIC CHIP	1uF		16V
C412	1-164-346-11	CERAMIC CHIP	1uF		16V
C413	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C414	1-124-779-00	ELECT CHIP	10uF	20%	16V
C415	1-163-031-91	CERAMIC CHIP	0.01uF		50V
C416	1-163-010-11	CERAMIC CHIP	0.0012uF	10%	50V
C417	1-126-395-11	ELECT	22uF	20%	16V
C418	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C419	1-124-120-11	ELECT	220uF	20%	25V
C420	1-126-204-11	ELECT CHIP	47uF	20%	16V
C424	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V
C425	1-164-346-11	CERAMIC CHIP	1uF		16V
C426	1-126-602-11	ELECT CHIP	3.3uF	20%	50V
C427	1-124-779-00	ELECT CHIP	10uF	20%	16V
C428	1-126-395-11	ELECT	22uF	20%	16V
C502	1-164-346-11	CERAMIC CHIP	1uF		16V
C601	1-164-346-11	CERAMIC CHIP	1uF		16V
C602	1-126-395-11	ELECT	22uF	20%	16V
C603	1-126-176-11	ELECT	220uF	20%	10V
C604	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C605	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C607	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C609	1-124-455-00	ELECT	100uF	20%	16V
C611	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C612	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C613	1-126-405-11	ELECT CHIP	10uF	20%	50V
C614	1-126-405-11	ELECT CHIP	10uF	20%	50V
C615	1-126-405-11	ELECT CHIP	10uF	20%	50V
C616	1-126-405-11	ELECT CHIP	10uF	20%	50V
C617	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C618	1-124-779-00	ELECT CHIP	10uF	20%	16V
C619	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C620	1-124-442-00	ELECT	330uF	20%	6.3V
C621	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C622	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C623	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C624	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C625	1-163-031-91	CERAMIC CHIP	0.01uF		50V
C701	1-124-570-11	ELECT	220uF	20%	16V
C702	1-126-204-11	ELECT CHIP	47uF	20%	16V
C703	1-126-405-11	ELECT CHIP	10uF	20%	50V
C704	1-130-771-00	FILM	0.18uF	10%	63V
C705	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C706	1-126-395-11	ELECT	22uF	20%	16V
C707	1-164-731-11	CERAMIC	120PF	10%	2KV
C708	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C801	1-124-147-00	ELECT	47uF	20%	25V
C802	1-124-455-00	ELECT	100uF	20%	16V
C803	1-124-147-00	ELECT	47uF	20%	25V
C804	1-163-031-91	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description	Remark
		< FILTER >	
CF201	1-409-369-00	TRAP, CERAMIC 5.5MHz	
CF204	1-567-567-11	FILTER, CERAMIC	
CF205	1-567-566-11	FILTER, CERAMIC	
CF301	1-579-348-11	FILTER, CERAMIC	
		< CONNECTOR >	
CN401 *	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	
CN801	1-565-073-11	SOCKET, CONNECTOR 16P	
		< TRIMMER >	
CV302	1-141-298-11	CAP, TRIMMER 30PF	
		< DIODE >	
D102	8-719-941-23	DIODE DA204U	
D104	8-719-400-18	DIODE MA152WK	
D106	8-719-951-22	DIODE IMN10	
D108	8-719-400-18	DIODE MA152WK	
D191	8-719-951-22	DIODE IMN10	
D403	8-719-941-23	DIODE DA204U	
D404	8-719-400-18	DIODE MA152WK	
D601	8-719-400-20	DIODE MA152WA	
D602	8-719-400-20	DIODE MA152WA	
D603	8-719-400-20	DIODE MA152WA	
D604	8-719-400-20	DIODE MA152WA	
D605	8-719-974-51	DIODE SB20-03P	
D606	8-719-106-53	DIODE RD10M-B2	
D701	8-719-400-18	DIODE MA152WK	
D702	8-719-105-82	DIODE RD5.1M-B2	
D703	8-719-105-82	DIODE RD5.1M-B2	
D704	8-719-941-23	DIODE DA204U	
		< DELAY LINE >	
DL301	1-415-649-11	DELAY LINE, 1H (ULTRASONIC)	
		< FUSE >	
F601 ⚠	1-532-777-21	FUSE, MICRO (SECONDARY) (1.25A/125V)	
		< IC >	
IC102	8-759-981-69	IC LM2904M	
IC103	8-759-420-88	IC AN5707NS	
IC104	8-759-234-77	IC TC4S66F	
IC105	8-759-234-77	IC TC4S66F	
IC106	8-759-234-77	IC TC4S66F	
IC201	8-759-246-18	IC TA8805F	
IC301	8-759-635-37	IC M52003AFP	
IC401	8-759-981-69	IC LM2904M	
IC402	8-759-701-54	IC NJM2073D	
IC601	8-759-802-39	IC CX20159	
IC602	8-759-630-27	IC M5236ML	
		< JACK >	
J101	1-507-974-11	JACK (EXT ANT)	
J401	1-568-593-51	JACK 1P (EAR)	
J501	1-568-593-51	JACK 1P (AUDIO/VIDEO IN)	
J601	1-569-966-11	JACK, DC (DC IN 9V)	
		< COIL >	
L201	1-410-373-31	INDUCTOR CHIP 2.2uH	
L202	1-410-373-31	INDUCTOR CHIP 2.2uH	
L204	1-404-633-11	COIL, VIF DETECTOR	
L205	1-404-633-11	COIL, AFT DETECTOR	
L209	1-410-383-31	INDUCTOR CHIP 15uH	
L301	1-410-384-31	INDUCTOR CHIP 18uH	
L302	1-410-385-11	INDUCTOR CHIP 22uH	
L303	1-410-387-11	INDUCTOR CHIP 33uH	
L304	1-410-383-31	INDUCTOR CHIP 15uH	
L305	1-410-385-11	INDUCTOR CHIP 22uH	
L306	1-410-385-11	INDUCTOR CHIP 22uH	
L601	1-460-032-11	COIL, CHOKE 100uH	
L602	1-424-298-11	COIL, CHOKE 82uH	
L603	1-412-032-11	INDUCTOR, CHIP 100uH	
L604	1-412-032-11	INDUCTOR, CHIP 100uH	
L605	1-412-032-11	INDUCTOR, CHIP 100uH	
L701	1-460-032-11	COIL, CHOKE 100uH	
L702	1-424-298-11	COIL, CHOKE 82uH	
		< TRANSISTOR >	
Q101	8-729-100-66	TRANSISTOR 2SC1623	
Q103	8-729-805-94	TRANSISTOR 2SC4047	
Q104	8-729-805-94	TRANSISTOR 2SC4047	
Q105	8-729-805-94	TRANSISTOR 2SC4047	
Q106	8-729-805-44	TRANSISTOR 2SC3397	
Q110	8-729-100-66	TRANSISTOR 2SC1623	
Q191	8-729-805-65	TRANSISTOR 2SA1344	
Q201	8-729-200-87	TRANSISTOR 2SC2714-Y	
Q202	8-729-805-94	TRANSISTOR 2SC4047	
Q203	8-729-805-94	TRANSISTOR 2SC4047	
Q204	8-729-100-66	TRANSISTOR 2SC1623	
Q301	8-729-100-66	TRANSISTOR 2SC1623	
Q302	8-729-216-22	TRANSISTOR 2SA1162-G	
Q305	8-729-216-22	TRANSISTOR 2SA1162-G	
Q306	8-729-100-66	TRANSISTOR 2SC1623	
Q307	8-729-100-66	TRANSISTOR 2SC1623	
Q308	8-729-216-22	TRANSISTOR 2SA1162-G	
Q401	8-729-140-75	TRANSISTOR 2SD999-CLCK	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

MAIN

Ref. No.	Part No.	Description		Remark
Q404	8-729-100-66	TRANSISTOR	2SC1623	
Q601	8-729-101-07	TRANSISTOR	2SB798-DL	
Q602	8-729-821-55	TRANSISTOR	2SC3647S	
Q603	8-729-101-07	TRANSISTOR	2SB798-DL	
Q701	8-729-100-66	TRANSISTOR	2SC1623	
Q702	8-729-904-60	TRANSISTOR	DTB113ZK	
Q703	8-729-100-66	TRANSISTOR	2SC1623	
Q704	8-729-216-22	TRANSISTOR	2SA1162-G	
Q705	8-729-805-41	TRANSISTOR	2SC3398	
Q706	8-729-805-65	TRANSISTOR	2SA1344	
Q707	8-729-805-41	TRANSISTOR	2SC3398	
Q708	8-729-805-65	TRANSISTOR	2SA1344	
Q709	8-729-920-34	TRANSISTOR	DTC143XK	
Q710	8-729-821-55	TRANSISTOR	2SC3647S	
Q711	8-729-821-55	TRANSISTOR	2SC3647S	
Q712	8-729-100-66	TRANSISTOR	2SC1623	
Q713	8-729-101-07	TRANSISTOR	2SB798-DL	

< RESISTOR >

R101	1-216-093-00	METAL CHIP	68K	5%	1/10W
R106	1-216-097-00	METAL CHIP	100K	5%	1/10W
R108	1-216-073-00	METAL CHIP	10K	5%	1/10W
R109	1-216-073-00	METAL CHIP	10K	5%	1/10W
R110	1-216-085-00	METAL CHIP	33K	5%	1/10W
R112	1-216-089-00	METAL CHIP	47K	5%	1/10W
R114	1-216-073-00	METAL CHIP	10K	5%	1/10W
R115	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R116	1-216-073-00	METAL CHIP	10K	5%	1/10W
R117	1-216-097-00	METAL CHIP	100K	5%	1/10W
R118	1-216-083-00	METAL CHIP	27K	5%	1/10W
R123	1-216-079-00	METAL CHIP	18K	5%	1/10W
R125	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R137	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R138	1-216-089-00	METAL CHIP	47K	5%	1/10W
R139	1-216-073-00	METAL CHIP	10K	5%	1/10W
R140	1-216-073-00	METAL CHIP	10K	5%	1/10W
R141	1-216-105-00	METAL CHIP	220K	5%	1/10W
R146	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R147	1-216-049-00	METAL CHIP	1K	5%	1/10W
R148	1-216-097-00	METAL CHIP	100K	5%	1/10W
R191	1-216-121-00	METAL CHIP	1M	5%	1/10W
R192	1-216-121-00	METAL CHIP	1M	5%	1/10W
R193	1-216-121-00	METAL CHIP	1M	5%	1/10W
R194	1-216-089-00	METAL CHIP	47K	5%	1/10W
R195	1-216-079-00	METAL CHIP	18K	5%	1/10W
R201	1-216-041-00	METAL CHIP	470	5%	1/10W
R202	1-216-097-00	METAL CHIP	100K	5%	1/10W
R203	1-216-093-00	METAL CHIP	68K	5%	1/10W
R209	1-216-045-00	METAL CHIP	680	5%	1/10W

Ref. No.	Part No.	Description			Remark
R210	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R211	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R212	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R213	1-216-041-00	METAL CHIP	470	5%	1/10W
R215	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R216	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R218	1-216-075-00	METAL CHIP	12K	5%	1/10W
R219	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R220	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R221	1-216-045-00	METAL CHIP	680	5%	1/10W
R222	1-216-027-00	METAL CHIP	120	5%	1/10W
R223	1-216-019-00	METAL CHIP	56	5%	1/10W
R224	1-216-040-00	METAL GLAZE	430	5%	1/10W
R225	1-216-011-00	METAL CHIP	27	5%	1/10W
R226	1-216-040-00	METAL GLAZE	430	5%	1/10W
R227	1-216-025-00	METAL CHIP	100	5%	1/10W
R228	1-216-035-00	METAL CHIP	270	5%	1/10W
R230	1-216-105-00	METAL CHIP	220K	5%	1/10W
R234	1-216-035-00	METAL CHIP	270	5%	1/10W
R235	1-216-083-00	METAL CHIP	27K	5%	1/10W
R238	1-216-037-00	METAL CHIP	330	5%	1/10W
R242	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R245	1-216-311-00	METAL CHIP	6.8	5%	1/10W
R246	1-216-021-00	METAL CHIP	68	5%	1/10W
R250	1-216-049-00	METAL CHIP	1K	5%	1/10W
R251	1-216-101-00	METAL CHIP	150K	5%	1/10W
R252	1-216-105-00	METAL CHIP	220K	5%	1/10W
R253	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R301	1-216-081-00	METAL CHIP	22K	5%	1/10W
R302	1-216-029-00	METAL CHIP	150	5%	1/10W
R303	1-216-081-00	METAL CHIP	22K	5%	1/10W
R304	1-216-043-00	METAL CHIP	560	5%	1/10W
R305	1-216-029-00	METAL CHIP	150	5%	1/10W
R306	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R308	1-216-027-00	METAL CHIP	120	5%	1/10W
R309	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R310	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R311	1-216-073-00	METAL CHIP	10K	5%	1/10W
R312	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R313	1-216-075-00	METAL CHIP	12K	5%	1/10W
R314	1-216-039-00	METAL CHIP	390	5%	1/10W
R315	1-216-085-00	METAL CHIP	33K	5%	1/10W
R316	1-216-079-00	METAL CHIP	18K	5%	1/10W
R317	1-216-109-00	METAL CHIP	330K	5%	1/10W
R319	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R320	1-216-077-00	METAL CHIP	15K	5%	1/10W
R321	1-216-089-00	METAL CHIP	47K	5%	1/10W
R322	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R323	1-216-091-00	METAL CHIP	56K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R324	1-216-077-00	METAL CHIP	15K	5%	1/10W
R325	1-216-035-00	METAL CHIP	270	5%	1/10W
R326	1-216-073-00	METAL CHIP	10K	5%	1/10W
R327	1-216-091-00	METAL CHIP	56K	5%	1/10W
R328	1-216-081-00	METAL CHIP	22K	5%	1/10W
R329	1-216-073-00	METAL CHIP	10K	5%	1/10W
R330	1-216-035-00	METAL CHIP	270	5%	1/10W
R333	1-216-121-00	METAL CHIP	1M	5%	1/10W
R334	1-216-049-00	METAL CHIP	1K	5%	1/10W
R335	1-216-121-00	METAL CHIP	1M	5%	1/10W
R336	1-216-049-00	METAL CHIP	1K	5%	1/10W
R337	1-216-121-00	METAL CHIP	1M	5%	1/10W
R338	1-216-049-00	METAL CHIP	1K	5%	1/10W
R339	1-216-104-00	METAL CHIP	200K	5%	1/10W
R340	1-216-085-00	METAL CHIP	33K	5%	1/10W
R342	1-216-043-00	METAL CHIP	560	5%	1/10W
R343	1-216-043-00	METAL CHIP	560	5%	1/10W
R344	1-216-077-00	METAL CHIP	15K	5%	1/10W
R345	1-216-077-00	METAL CHIP	15K	5%	1/10W
R346	1-216-103-00	METAL CHIP	180K	5%	1/10W
R347	1-216-073-00	METAL CHIP	10K	5%	1/10W
R348	1-216-748-11	METAL CHIP	39K	1%	1/10W
R350	1-216-043-00	METAL CHIP	560	5%	1/10W
R357	1-216-081-00	METAL CHIP	22K	5%	1/10W
R358	1-216-077-00	METAL CHIP	15K	5%	1/10W
R361	1-216-121-00	METAL CHIP	1M	5%	1/10W
R362	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R363	1-216-105-00	METAL CHIP	220K	5%	1/10W
R364	1-216-105-00	METAL CHIP	220K	5%	1/10W
R365	1-216-109-00	METAL CHIP	330K	5%	1/10W
R366	1-216-109-00	METAL CHIP	330K	5%	1/10W
R398	1-216-081-00	METAL CHIP	22K	5%	1/10W
R402	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R403	1-216-097-00	METAL CHIP	100K	5%	1/10W
R405	1-216-113-00	METAL CHIP	470K	5%	1/10W
R406	1-216-091-00	METAL CHIP	56K	5%	1/10W
R407	1-216-073-00	METAL CHIP	10K	5%	1/10W
R409	1-216-073-00	METAL CHIP	10K	5%	1/10W
R410	1-216-073-00	METAL CHIP	10K	5%	1/10W
R411	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R412	1-216-748-11	METAL CHIP	39K	1%	1/10W
R413	1-216-748-11	METAL CHIP	39K	1%	1/10W
R414	1-216-089-00	METAL CHIP	47K	5%	1/10W
R415	1-216-748-11	METAL CHIP	39K	1%	1/10W
R416	1-216-748-11	METAL CHIP	39K	1%	1/10W
R417	1-216-009-00	METAL CHIP	22	5%	1/10W
R418	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R419	1-216-075-00	METAL CHIP	12K	5%	1/10W
R420	1-216-001-00	METAL CHIP	10	5%	1/10W

Ref. No.	Part No.	Description			Remark
R421	1-216-001-00	METAL CHIP	10	5%	1/10W
R422	1-216-037-00	METAL CHIP	330	5%	1/10W
R427	1-216-097-00	METAL CHIP	100K	5%	1/10W
R428	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R429	1-216-113-00	METAL CHIP	470K	5%	1/10W
R430	1-216-101-00	METAL CHIP	150K	5%	1/10W
R431	1-216-033-00	METAL CHIP	220	5%	1/10W
R432	1-216-017-00	METAL CHIP	47	5%	1/10W
R506	1-216-073-00	METAL CHIP	10K	5%	1/10W
R601	1-216-025-00	METAL CHIP	100	5%	1/10W
R602	1-216-031-00	METAL CHIP	180	5%	1/10W
R603	1-216-073-00	METAL CHIP	10K	5%	1/10W
R604	1-216-043-00	METAL CHIP	560	5%	1/10W
R605	1-216-083-00	METAL CHIP	27K	5%	1/10W
R606	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R608	1-216-009-00	METAL CHIP	22	5%	1/10W
R609	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R610	1-216-097-00	METAL CHIP	100K	5%	1/10W
R611	1-216-097-00	METAL CHIP	100K	5%	1/10W
R613	1-216-009-00	METAL CHIP	22	5%	1/10W
R614	1-216-075-00	METAL CHIP	12K	5%	1/10W
R615	1-216-045-00	METAL CHIP	680	5%	1/10W
R616	1-216-097-00	METAL CHIP	100K	5%	1/10W
R617	1-216-033-00	METAL CHIP	220	5%	1/10W
R618	1-216-083-00	METAL CHIP	27K	5%	1/10W
R619	1-216-073-00	METAL CHIP	10K	5%	1/10W
R620	1-216-025-00	METAL CHIP	100	5%	1/10W
R621	1-216-001-00	METAL CHIP	10	5%	1/10W
R622	1-216-001-00	METAL CHIP	10	5%	1/10W
R623	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R624	1-216-085-00	METAL CHIP	33K	5%	1/10W
R625	1-216-095-00	METAL CHIP	82K	5%	1/10W
R701	1-216-105-00	METAL CHIP	220K	5%	1/10W
R702	1-216-105-00	METAL CHIP	220K	5%	1/10W
R703	1-216-073-00	METAL CHIP	10K	5%	1/10W
R704	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R705	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R706	1-216-077-00	METAL CHIP	15K	5%	1/10W
R707	1-216-101-00	METAL CHIP	150K	5%	1/10W
R708	1-216-258-00	METAL GLAZE	330K	5%	1/8W
R709	1-216-258-00	METAL GLAZE	330K	5%	1/8W
R710	1-216-174-00	METAL GLAZE	100	5%	1/8W
R711	1-216-174-00	METAL GLAZE	100	5%	1/8W
R712	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R713	1-216-097-00	METAL CHIP	100K	5%	1/10W
R714	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R715	1-216-073-00	METAL CHIP	10K	5%	1/10W
R716	1-216-081-00	METAL CHIP	22K	5%	1/10W
R717	1-216-049-00	METAL CHIP	1K	5%	1/10W

MAIN

Ref. No.	Part No.	Description	Remark
		< VARIABLE RESISTOR >	
RV101	1-238-716-11	RES, ADJ, METAL GLAZE 100K	
RV102	1-238-716-11	RES, ADJ, METAL GLAZE 100K	
RV103	1-238-716-11	RES, ADJ, METAL GLAZE 100K	
RV104	1-238-715-11	RES, ADJ, METAL GLAZE 47K	
RV105	1-238-715-11	RES, ADJ, METAL GLAZE 47K	
RV106	1-238-715-11	RES, ADJ, METAL GLAZE 47K	
RV201	1-228-995-00	RES, ADJ, METAL 22K	
RV301	1-228-996-00	RES, ADJ, METAL 47K	
RV302	1-228-996-00	RES, ADJ, METAL 47K	
RV303	1-228-996-00	RES, ADJ, METAL 47K	
RV305	1-230-498-11	RES, ADJ, CARBON 47K (BRIGHT)	
RV306	1-228-996-00	RES, ADJ, METAL 47K	
RV307	1-230-722-11	RES, ADJ, CARBON 22K (COLOUR)	
RV308	1-228-991-00	RES, ADJ, METAL 2.2K	
RV309	1-228-997-00	RES, ADJ, METAL 100K	
RV310	1-228-996-00	RES, ADJ, METAL 47K	
RV311	1-228-996-00	RES, ADJ, METAL 47K	
RV401	1-241-547-11	RES, VER, CARBON 10K (VOLUME)	
RV601	1-228-993-00	RES, ADJ, METAL 4.7K	
RV602	1-228-993-00	RES, ADJ, METAL 4.7K	
RV603	1-228-993-00	RES, ADJ, METAL 4.7K	
		< SWITCH >	
S101	1-554-061-00	SWITCH, SLIDE (BAND)	
S102	1-554-303-21	SWITCH, TACTILE (TUNING -)	
S103	1-554-303-21	SWITCH, TACTILE (TUNING +)	
S104	1-554-303-21	SWITCH, TACTILE (CH CALL)	
S601	1-554-061-00	SWITCH, SLIDE (POWER)	
		< FILTER >	
SWF201	1-577-604-11	FILTER, SAW (38.9MHz)	
		< TRANSFORMER >	
T301	1-459-949-11	COIL	
T601	1-450-287-11	TRANSFORMER, DC-DC CONVERTER	
T701	1-450-286-11	TRANSFORMER, DC-AC CONVERTER	
		< TUNER UNIT >	
TU101	1-466-590-11	TUNER UNIT	
		< CRYSTAL >	
X301	1-567-504-81	OSCILLATOR, CRYSTAL (4.433619MHz)	

****

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
ANT101	1-501-494-11	ANTENNA, TELESCOPIC	
FL701	1-519-563-11	INDICATOR TUBE, FLUORESCENT	
ND701	1-808-658-11	DISPLAY MODULE, LIQUID CRYSTAL	
SP401	1-544-548-11	SPEAKER (8CM)	

****

ACCESSORIES & PACKING MATERIALS

****

⚠	1-465-817-11	ADAPTOR, AC (AC-E702AE)
	1-558-949-11	CABLE, ANTENNA
	3-754-010-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, DUTCH, SWEDISH)
*	4-030-767-01	CUSHION (UPPER)
*	4-030-768-01	CUSHION (LOWER)
*	4-033-707-01	INDIVIDUAL CARTON
	9-910-999-32	BAG, PROTECTION

****

HARDWARE LIST

#1	7-682-547-04	SCREW +B 3X6
#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
#3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S
#4	7-685-649-79	SCREW +BVTP 3X14 TYPE2 N-S
#5	7-685-105-19	SCREW (2X8), + PTPWH

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

9-956-642-11

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General Audio Group

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